STATE OF MICHIGAN

JOHN ENGLER, Governor

DEPARTMENT OF ENVIRONMENTAL QUALITY

"Better Service for a Better Environment"

HOLLISTER BUILDING PO BOX 30473 LANSING MI 48909-7973

INTERNET: www.deq.state.mi.us

RUSSELL J. HARDING, Director

March 13, 2000

Mr. John C. Hertel, Chairperson
Macomb County Board of Commissioners
40 North Gratiot
Mt. Clemens, Michigan 48043

Dear Mr. Hertel:

The Department of Environmental Quality (DEQ) received the locally approved update to the Macomb County Solid Waste Management Plan (Plan) on July 12, 1999.

The Plan provides for more than ten years of disposal capacity by relying primarily on Pine Tree Acres Landfill in Macomb County (County) to meet its final solid waste disposal needs. In addition, the County has authorized its waste to be exported to Washtenaw, Sanilac, Oakland, Wayne, Jackson, Lenawee, Shiawassee, and Monroe Counties. The County authorizes the importation of waste from Wayne, Oakland, Lapeer, Monroe, Washtenaw, Genesse, Livingston, Tuscola, Sanilac, Huron, Saginaw, and Shiawassee Counties.

By approving the Plan, the DEQ has determined that it complies with the provisions of Part 115, Solid Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, and the Part 115 rules concerning the required content of solid waste management plans. Specifically, the DEQ has determined that the Plan identifies the enforceable mechanisms that authorize the state, a county, a municipality, or a person to take legal action to guarantee compliance with the Plan, as required by Part 115. The Plan is enforceable, however, only to the extent the County properly implements these enforceable mechanisms under applicable enabling legislation. The Plan itself does not serve as such underlying enabling authority, and the DEQ approval of the Plan neither restricts nor expands the County authority to implement these enforceable mechanisms.

The Plan may also contain other provisions that are neither required nor expressly authorized for inclusion in a solid waste management plan. The DEQ approval of the Plan does not extend to any such provisions. Under Part 115, the DEQ has no statutory authority to determine whether such provisions have any force or effect.

By this letter, the Plan is hereby approved and the County now assumes responsibility for the enforcement and implementation of this Plan. The DEQ would like to thank the County for its efforts in addressing the solid waste management issues in the County.

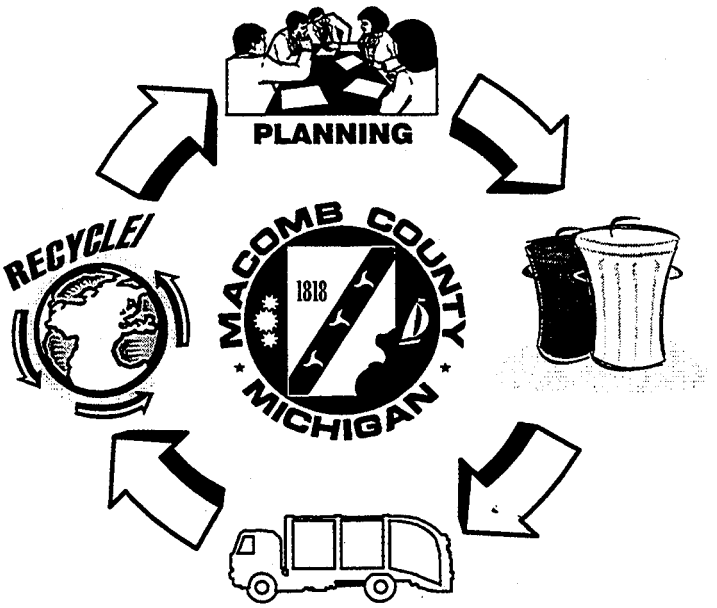
If you have any questions, you may contact Mr. Seth Phillips, Chief, Solid Waste Management Unit, Waste Management Division, at 517-373-4750.

Sincerely,

Russell J. Harding
Director
517-373-7917

cc: Senator Arthur J. Miller, Jr.
Senator Kenneth J. DeBeaussaert
Senator Dave Jaye
Representative William J. Callahan
Representative Michael Switalski
Representative Paul Wojno
Representative Jennifer Faunce
Representative Sue Rocca
Representative Paul Gieleghem
Representative Alan Sanborn
Representative Janet L. Kukuk
Mr. Bernard E. Giampetroni, Macomb County Department of Planning
Mr. Arthur R. Nash Jr., Deputy Director, DEQ
Ms. Cathy Wilson, Legislative Liaison, DEQ
Mr. Jim Sygo, DEQ
Ms. Joan Peck, DEQ
Dr. Benedict Okwumabua – Southeast Michigan
Mr. Seth Phillips, DEQ
Mr. Matt Staron, DEQ

MACOMB COUNTY SOLID WASTE MANAGEMENT PLAN



UPDATE 1999

Plan Prepared by:

RMT, Inc.,

Ann Arbor, Michigan

PLAN FORMAT

FOR PREPARING

COUNTY SOLID WASTE MANAGEMENT PLANS

AS REQUIRED BY SECTION 11539a OF
PART 115, SOLID WASTE MANAGEMENT, OF
THE NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT
1994 PA 451, AS AMENDED

John Engler, Governor
Russell J. Harding, Director

Michigan Department of Environmental Quality
Waste Management Division

This document is available to download from our Internet site at:
http://www.deq.state.mi.us./wmd/sections/swpshome.html

EQP 5210 (8-97)

1997 PLAN UPDATE COVER PAGE

MDEQ information is denoted by the font "CG Times - 10" throughout this report as shown here. Information provided by Macomb is denoted by the font "Arial - 12" throughout the report as shown here.

The Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA), Part 115, Solid Waste Management, and its Administrative Rules, requires that each County have a Solid Waste Management Plan Update (Plan) approved by the Michigan Department of Environmental Quality (DEQ). Section 11539a requires the DEQ to prepare and make available a standardized format for the preparation of these Plan updates. This document is that format. The Plan should be prepared using this format without alteration. Please refer to the document entitled "Guide to Preparing the Solid Waste Management Plan Update" for assistance in completing this Plan format.

DATE SUBMITTED TO THE DEQ: 6/30/99

If this Plan includes more than a single County, list all counties participating in this Plan.

Macomb County
St. Clair County
(includes the portion of the City of Memphis in St. Clair County).

The following lists all the municipalities from outside the County who have requested and have been accepted to be included in the Plan, or municipalities within the County that have been approved to be included in the Plan of another County according to Section 11536 of Part 115 of the NREPA. Resolutions from all involved County boards of commissioners approving the inclusion are included in Appendix D.

Municipality	Original Planning County	New Planning County
Memphis	St. Clair	Macomb

DESIGNATED PLANNING AGENCY PREPARING THIS PLAN UPDATE:
Macomb County Department of Planning and Economic Development

Stephen Cassin — New Exec. Director

CONTACT PERSON: Mr. Bernard E. Giampetroni, Executive Director

ADDRESS: Macomb County Department of Planning and Economic Development
1 S. Main
Mount Clemens, Michigan 48043

PHONE: (810) 469-5285 FAX: (810) 469-6787 (If Applicable)

E-MAIL: _____ (If Applicable)

CENTRAL REPOSITORY LOCATION(S): Macomb County Department of Planning and Economic Development, 1 S. Main, Mount Clemens, Michigan 48043

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EXECUTIVE SUMMARY

The following summarizes the solid waste management system selected to manage solid waste within the County. In case of conflicting information between the executive summary and the remaining contents of the Plan update, the information provided in the main body of the Plan update found on the following pages will take precedence over the executive summary.

OVERALL VIEW OF THE COUNTY (attach additional pages as necessary)

Township or Municipality Name	Population	% Land Use			% of Economic Base*			
		Rural	Urban	Ag	For	Ind	Com	Oth
Armada	1673	58	42	27	NA	3	12	58
Armada Twp.	4079	89	11	99	NA	0	0	1
Bruce Twp.	6426	66	44	58	NA	34	1	7
Center Line	8337	24	76	0	NA	40	25	34
Chesterfield Twp.	33733	74	23	54	NA	17	11	19
Clinton Twp.	96836	43	57	1	NA	12	28	58
Eastpointe	34527	22	78	0	NA	4	43	53
Fraser	15135	28	72	1	NA	51	22	27
Harrison Twp.	26105	66	33	0	NA	3	7	90
Lake Twp.	107	100	0	0	NA	0	0	100
Lenox Twp.	5960	91	9	87	NA	4	1	8
Macomb Twp.	38969	79	21	82	NA	1	2	15
Memphis	1030	72	28	65	NA	2	4	29
Mount Clemens	17685	36	64	1	NA	29	31	39
New Baltimore	7545	71	29	31	NA	6	15	48
New Haven	2960	79	21	45	NA	22	5	28
Ray Twp.	4154	91	9	92	NA	0	0	8
Richmond	5241	55	45	31	NA	26	17	26
Richmond Twp.	3084	92	8	98	NA	1	0	1
Romeo	3913	48	52	16	NA	53	5	26
Roseville	49757	24	76	0	NA	36	37	27

Township or Municipality Name	Population	% Land Use			% of Economic Base*			
		Rural	Urban	Ag	For	Ind	Com	Oth
St. Clair Shores	65277	5	95	0	NA	1	10	89
Shelby Twp.	64642	56	44	17	NA	27	16	40
Sterling Heights	119283	43	57	0	NA	34	21	45
Utica	5061	40	60	0	NA	1	72	27
Warren	137328	25	75	0	NA	46	23	31
Washington Twp.	17028	79	21	56	NA	11	2	31

Total Population Macomb County Communities 775,875

*Ag = Agriculture; For = Forestry; Ind = Industry; Com = Commercial; Oth = All Other Economic Bases
Additional listings, if necessary, are listed on an attached page.

Population projections were obtained from Southeast Michigan Council of Governments (SEMCOG) data.

Economic data for Macomb County was obtained from the report "County/Community Profiles" prepared by the Macomb County Department of Planning and Economic Development.

EXECUTIVE SUMMARY

This Plan has been prepared on behalf of Macomb County and its municipalities under the provisions of Part 115 of Act No. 451 of the Public Acts of 1994, as amended, known as the Natural Resources and Environmental Protection Act. This Plan addresses the solid waste management needs of Macomb County to ensure that all non-hazardous waste generated is collected, recovered, processed, and disposed in a manner consistent with state law and in an environmentally sound manner.

The Study Area for this Plan includes all of the Macomb County communities including the northern portion of the City of Memphis located in St. Clair County.

The Plan was developed to meet four Primary goals:

Goal 1: Fulfill the requirements of Part 115 of Michigan's Natural Resources and Environmental Protection Act (NREPA, 1994 PA 451, as amended) for solid waste management planning.

Goal 2: Reduce the quantity and volume of Macomb County's waste stream that must be disposed in landfills to meet the State Solid Waste Policy for reduction, reuse, composting, recycling, and disposal.

Goal 3: Assure that public health, safety, and the environment are protected from adverse effects of improper solid waste management activities.

Goal 4: Identify the institutional arrangements for the successful implementation of the Solid Waste Management Plan Update.

The current population of the planning area is estimated to be 775,875 people. The population of the study area is expected to increase to 832,596 people by the year 2009. It is estimated that 719,300 tons of residential, commercial, industrial, and other waste is generated in the planning area. This is expected to increase to 771,880 tons by the year 2009. Waste projections were based on waste generation rates developed during previous planning efforts. Residential waste was projected to be 3.08 pounds per capita per day. Commercial waste is generated at a rate of 0.8 pounds with industrial waste generated at a rate of 0.6 pounds per capita per day. Other waste including sludges, demolition, and construction waste is generated at a rate of 0.6 pounds per capita per day.

The center of waste generation was determined to be located in the southern portion of the County. The cities of Warren, Sterling Heights, and St. Clair Shores, and Clinton Township have over 50 percent of the population of Macomb County and generate the greatest quantities of waste in the County. The center of waste generation for industrial waste is likely along the industrial corridors in Warren and Sterling Heights.

Macomb County has one active landfill, the Pine Tree Acres Landfill in Lenox Township. This facility has sufficient capacity to meet the disposal needs of the Macomb County planning area through the next five and ten year planning periods. The Grosse Pointe-Clinton Refuse Disposal Authority operates an incinerator in Clinton Township. This facility is scheduled to cease operation by April 1999.

Macomb County exports approximately 828,300 cubic yards of refuse, and 30,000 cubic yards of incinerator ash. The export of incinerator ash will cease with the closing of the Grosse Pointe-Clinton Refuse Disposal Authority incinerator. Survey data indicates that Macomb County imported 468,400 cubic yards of waste from Oakland, St. Clair, Wayne, and Lapeer Counties. The data indicates that Macomb County is a net exporter of waste.

Solid waste is collected by private haulers operating under contracts with municipalities or through agreements with individual homeowners, except in the City of Warren which provides municipal collection. Four transfer stations operate within Macomb County. They are the South Macomb Disposal Authority Transfer Station serving the communities of Eastpointe, St. Clair Shores, Roseville, and Center Line; Warren Transfer Station; Ray Township Transfer Station; and the Armada Township Transfer Station. The major routes used for refuse hauling vehicles traveling north-south in the County are Van Dyke (M-53), Groesbeck (M-97), Mound, North Avenue, I-94, and Gratiot Avenue (M-3). Harper Avenue is used by vehicles traveling to and from the St. Clair Shores area and to the Grosse Pointe-Clinton Refuse Disposal Authority incinerator. East-west travel is accomplished by using several of the Mile Roads in the southern portion of the County. 29 Mile Road in the northern portion of the County, is used extensively by haulers transporting waste to the Pine Tree Acres Landfill. Other County Roads are also used, generally for short distances in traveling to and from the major routes to disposal areas.

Macomb County has experienced a significant increase in the number of communities that are actively involved in recycling programs since the 1994 Plan Update. Many communities within Macomb County plan, operate, and evaluate their recycling and composting programs with the assistance of private haulers. Sixteen communities within Macomb County indicated that they have a recycling program operating at the current time, while other communities noted that they were interested in information on how they could get materials collected for recycling including plastic containers, newspaper, corrugated containers, glass, metals, used oil, appliances, batteries, and styrofoam. Grass clippings, leaves, and garden debris are collected for composting. The City of St. Clair Shores has a recycling and compost ordinance that requires mandatory separation of recyclables and yard waste from other solid waste for one-family and two-family residential dwellings. Other recycling limitations are provided by each private hauler, and there are no other ordinances or regulations affecting the operation of any of these programs.

Twelve communities in Macomb County indicated that they have a composting program operating at the current time. Grass clippings, leaves, and garden debris are collected primarily by the private waste haulers servicing each community. Most of the private

haulers offer curb-side pickup, while some communities have drop-off sites from where the private haulers take it to a composting facility. Macomb County contributes composted waste to several compost facilities in southeastern Michigan including King of the Winds, Indian Summer Recycling, and Pine Tree Acres Landfill. Many communities provide educational information to increase participation in the recycling programs.

The Macomb County Health Department has established a household hazardous waste program that is available to all Macomb County households. Materials can be dropped off by appointment at a hazardous waste storage building located at the Health Department. The program is funded by the Macomb County Board of Commissioners through the Health Department budget. The program will accept Automotive Products (gasoline, motor oil, battery acid, solvents and degreasers, brake fluid, transmission fluid, and spray paint), Gardening Products (pesticides, weed killers, poisons, sprays and dust, and fertilizers), and Household Products (oven cleaners, muriatic acid, rat and ant poison, drain cleaner, pool chemicals, photo chemicals, household batteries, paint thinner and solvents, paint stripper, nail polish and remover, aerosols, and oil based paint). Other household hazardous waste programs are offered by the US Postal Service, City of St. Clair Shores, City of Eastpointe, and City of Roseville.

The Plan identified the existing solid waste management system as the most efficient, environmentally sound alternative. This system has wide spread acceptance by the public. No other alternatives were evaluated in detail.

CONCLUSIONS

This Plan concludes that the existing solid waste management system is the most cost-effective, environmentally sound alternative for the Macomb County planning area.

SELECTED ALTERNATIVES

The Selected Alternative consists of private collection of residential, commercial, and industrial waste through contracts with municipalities, commercial/industrial users, or directly with homeowners for residential pick-up. Waste is hauled directly to disposal facilities, except for the communities of Ray and Armada Townships, and the cities of Warren, Eastpointe, St. Clair Shores, Roseville, and Center Line where waste is brought to a transfer station and then hauled to the disposal facility.

Private refuse firms provide recycling for contract communities through drop-off centers and curb-side collection. Glass, paper, plastic, metal, batteries, white goods, and used motor oil are recycled. Yard waste and grass clippings are disposed at composting facilities. Household hazardous waste can be periodically disposed at Macomb County Health Department and other agencies facilities.

Waste that is not recycled is disposed in licensed sanitary landfills in Macomb County and adjoining counties or is incinerated at the Grosse Pointe-Clinton Refuse Disposal Authority

incinerator. Macomb County has sufficient landfill space to meet its needs for the five year and ten year planning periods.

INTRODUCTION

GOALS AND OBJECTIVES

To comply with Part 115 and its requirements, each Plan must be directed toward goals and objectives based on the purposes stated in Part 115, Sections 11538.(1)(a), 11541.(4) and the State Solid Waste Policy adopted pursuant to this Section, and Administrative Rules 711(b)(i) and (ii). At a minimum, the goals must reflect two major purposes of Solid Waste Management Plans:

(1) To utilize to the maximum extent possible the resources available in Michigan's solid waste stream through source reduction, source separation, and other means of resource recovery and;

(2) To prevent adverse effects on the public health and the environment resulting from improper solid waste collection, transportation, processing, or disposal, so as to protect the quality of the air, the land, and ground and surface waters.

This Solid Waste Management Plan works toward the following goals through actions designed to meet the objectives described under the respective goals which they support:

Goal 1: Fulfill the requirements of Part 115 of Michigan's Natural Resources and Environmental Protection Act (NREPA, 1994 PA 451, as amended) for solid waste management planning.

Objective 1a: Inventory the existing solid waste management system in Macomb County with regards to collection, transportation, processing, and disposal issues.

Objective 1b: Estimate solid waste generation within Macomb County for five year and 10 year projections.

Objective 1c: Assess opportunities in waste reduction, composting, recyclable materials and energy recovery, along with the need for landfill facilities to determine the relative feasibility of different options and how they compare in terms of environmental and monetary cost to the public.

Objective 1d: Inform elected officials and all interested citizens of findings and recommendations resulting from the planning study through a public hearing and the preparation and distribution of the Plan Update.

Goal 2: Reduce the quantity and volume of Macomb County's waste stream that must be disposed in landfills to meet the State Solid Waste Policy for reduction, reuse, composting, recycling, and disposal.

Objective 2a: Identify existing community recycling programs, compost facilities, and solid waste management education programs in use in Macomb County.

Objective 2b: Encourage continued participation in existing programs and expansion of these programs in communities that do not provide source reduction, source separation, composing, or recycling.

Goal 3: Assure that public health, safety, and the environment are protected from adverse effects of improper solid waste management activities.

Objective 3a: Identify sufficient disposal capacity to accommodate the solid waste generated in Macomb County for a 10-year planning period.

Objective 3b: Ensure that state-of-the-art technologies for protecting public health and the environment are utilized in developing and operating solid waste facilities.

Goal 4: Identify the institutional arrangements for the successful implementation of the Solid Waste Management Plan Update.

Objective 4a: Identify existing institutional systems and controls for the collection, transportation, reduction, and disposal of solid waste.

Objective 4b: Obtain letters of agreement from public and private operations responsible for implementation of the selected solid waste management system, and documentation from owners or operators to confirm that Macomb County has access to listed disposal capacities.

Objective 4c: Identify the amounts of waste imported into Macomb County and exported from Macomb County and coordinate with other Counties to authorize acceptable quantities of waste imports and exports.

Objective 4d: Provide for the continuous comprehensive plan revision procedure that will allow the Solid Waste Management Plan to be reviewed, assessed, and updated on a five year basis.

☐ Note: Additional goals and objectives are listed on the attached pages.

DATABASE

Identification of sources of waste generation within the county, total quantity of solid waste generated to be disposed, and sources of the information. (Attach additional pages as necessary)

The following database is derived from the listed sources:

Residential, commercial, industrial, and other types of waste were calculated by RMT., Inc. Michigan, utilizing waste generation factors developed for Macomb County from disposal facility data. Previous studies have shown that approximately 60% of the Macomb County waste stream is residential waste (Figure 1). This equates to a generation rate of 3.08 pounds per capita per day. Commercial solid waste comprises 16% of the waste stream and is generated from commercial businesses such as wholesale and retail trade, banks and other financial institutions, offices, governmental buildings, restaurants, hotels, motels, and schools. Commercial solid waste is generated at a rate of 0.8 pounds per capita per day.

Industrial waste comprises 12% of the Macomb County waste stream. Industrial waste is defined as waste coming from manufacturing, transportation, communication, public utilities, processing, assembly, and distribution facilities. Industrial waste is generated at a rate of 0.6 pounds per capita per day. Other waste comprises waste not fitting into the other three categories. This includes construction/demolition waste, fly ash, municipal wastewater treatment plant sludges, bulky items, tires, foundry sand, sawdust, and agricultural waste. Other waste is generated at a rate of 0.6 pounds per capita per day.

The following table presents the projected waste quantities for the planning area.

		Waste Projections (tons per year)					
			Waste Types				
Community	Year	Population	Residential	Commercial	Industrial	Other	Total
Macomb County							
Armada							
	1999	1,673	940	244	183	183	1,551
	2004	1,718	966	251	188	188	1,593
	2009	1,757	988	257	192	192	1,629

Community	Year	Population	Residential	Commercial	Waste Types Industrial	Other	Total
Armada Twp.							
	1999	4,079	2,293	596	447	447	3,782
	2004	4,604	2,588	672	504	504	4,268
	2009	5,131	2,884	749	562	562	4,757
Bruce Twp.							
	1999	6,426	3,612	938	704	704	5,958
	2004	7,429	4,176	1,085	813	813	6,887
	2009	8,413	4,729	1,228	921	921	7,800
Center Line							
	1999	8,337	4,686	1,217	913	913	7,729
	2004	8,214	4,617	1,199	899	899	7,615
	2009	8,096	4,551	1,182	887	887	7,506
Chesterfield Twp.							
	1999	33,733	18,961	4,925	3,694	3,694	31,274
	2004	35,131	19,747	5,129	3,847	3,847	32,570
	2009	36,508	20,521	5,330	3,998	3,998	33,847
Clinton Twp.							
	1999	96,836	54,432	14,138	10,604	10,604	89,777
	2004	100,213	56,330	14,631	10,973	10,973	92,907
	2009	103,517	58,187	15,113	11,335	11,335	95,971
Eastpointe							
	1999	34,527	19,408	5,041	3,781	3,781	32,010
	2004	34,417	19,346	5,025	3,769	3,769	31,908
	2009	34,041	19,134	4,970	3,727	3,727	31,559
Fraser							
	1999	15,135	8,507	2,210	1,657	1,657	14,032
	2004	14,968	8,414	2,185	1,639	1,639	13,877
	2009	14,514	8,158	2,119	1,589	1,589	13,456
Harrison Twp.							
	1999	26,105	14,674	3,811	2,858	2,858	24,202
	2004	26,533	14,914	3,874	2,905	2,905	24,599
	2009	27,111	15,239	3,958	2,969	2,969	25,135
Lake Twp.							
	1999	107	60	9	7	7	83
	2004	112	63	9	7	7	86
	2009	119	67	10	7	7	91
Lenox Twp.							
	1999	5,960	3,350	870	653	653	5,526
	2004	6,710	3,772	980	735	735	6,221
	2009	7,451	4,188	1,088	816	816	6,908

Community	Year	Population	Residential	Commercial	Waste Types Industrial	Other	Total
Macomb Twp.							
	1999	38,969	21,904	5,689	4,267	4,267	36,128
	2004	49,484	27,815	7,225	5,418	5,418	45,877
	2009	61,600	34,625	8,994	6,745	6,745	57,109
Memphis							
	1999	1,030	579	150	113	113	955
	2004	1,111	624	162	122	122	1,030
	2009	1,218	685	178	133	133	1,129
Mt.. Clemens							
	1999	17,685	9,941	2,582	1,937	1,937	16,396
	2004	17,056	9,587	2,490	1,868	1,868	15,813
	2009	16,885	9,491	2,465	1,849	1,849	15,654
New Baltimore							
	1999	7,545	4,241	1,102	826	826	6,995
	2004	8,021	4,509	1,171	878	878	7,436
	2009	8,487	4,771	1,239	929	929	7,868
New Haven							
	1999	2,960	1,664	432	324	324	2,744
	2004	3,180	1,787	464	348	348	2,948
	2009	3,368	1,893	492	369	369	3,122
Ray Twp.							
	1999	4,154	2,335	606	455	455	3,851
	2004	4,613	2,593	673	505	505	4,277
	2009	5,078	2,854	741	556	556	4,708
Richmond							
	1999	5,241	2,946	765	574	574	4,859
	2004	5,850	3,288	854	641	641	5,424
	2009	6,536	3,674	954	716	716	6,060
Richmond Twp.							
	1999	3,084	1,734	450	338	338	2,859
	2004	3,329	1,871	486	365	365	3,086
	2009	3,574	2,009	522	391	391	3,313
Romeo							
	1999	3,913	2,199	571	428	428	3,628
	2004	3,997	2,247	584	438	438	3,706
	2009	4,067	2,286	594	445	445	3,771
Roseville							
	1999	49,757	27,968	7,265	5,448	5,448	46,130
	2004	48,892	27,482	7,138	5,354	5,354	45,328
	2009	48,210	27,099	7,039	5,279	5,279	44,695

Community	Year	Population	Residential	Commercial	Waste Types Industrial	Other	Total
St. Clair Shores							
	1999	65,277	36,692	9,530	7,148	7,148	60,518
	2004	64,522	36,268	9,420	7,065	7,065	59,818
	2009	64,139	36,053	9,364	7,023	7,023	59,463
Shelby Twp.							
	1999	64,642	36,335	9,438	7,078	7,078	59,930
	2004	72,213	40,591	10,543	7,907	7,907	66,949
	2009	80,016	44,977	11,682	8,762	8,762	74,183
Sterling Heights							
	1999	119,283	67,049	17,415	13,061	13,061	110,587
	2004	120,126	67,523	17,538	13,154	13,154	111,369
	2009	121,270	68,166	17,705	13,279	13,279	112,429
Utica							
	1999	5,061	2,845	739	554	554	4,692
	2004	5,057	2,843	738	554	554	4,688
	2009	5,050	2,839	737	553	553	4,682
Warren							
	1999	137,328	77,192	20,050	15,037	15,037	127,317
	2004	135,038	75,905	19,716	14,787	14,787	125,194
	2009	133,597	75,095	19,505	14,629	14,629	123,858
Washington Twp.							
	1999	17,028	9,571	2,486	1,865	1,865	15,787
	2004	19,779	11,118	2,888	2,166	2,166	18,337
	2009	22,723	12,773	3,318	2,488	2,488	21,066
Macomb County Total							
	1999	775,875	436,179	113,287	84,965	84,965	719,300
	2004	802,461	451,063	117,152	87,864	87,864	743,944
	2009	832,596	468,002	121,551	91,163	91,163	771,880

TOTAL QUANTITY OF SOLID WASTE GENERATED:
719,300 Tons in 1999

TOTAL QUANTITY OF SOLID WASTE NEEDING DISPOSAL:
640,150 Tons in 1999

The Macomb County planning area is projected to generate 719,300 tons of waste in 1999. Not all of the waste generated is disposed in landfills or at the GPCRDA Incinerator. Some waste is removed from the waste stream and is recovered in recycling or compost programs. Macomb County recycles 5.9 percent (42,100 tons) and composts

5.2 percent of the planning area generated (37,050 tons) waste. Figure 2 shows how much waste is generated in the planning area and the quantities removed prior to final disposal.

The solid waste management system in Macomb County is operating efficiently and without significant problems that would affect the collection, transport, disposal, or recycling of waste. Since the completion of the first Solid Waste Management Plan developed by the Macomb County Board of Commissioners, solid waste practices have been simplified and recycling programs have increased. Recycling efforts have increased from four communities planning programs in 1994 to 16 communities with active programs in 1998. Macomb County has one active licensed landfill that is capable of meeting the disposal needs of the County through a ten year planning period. This is a significant improvement over the 18 landfills that that were used for disposal as prior to 1982. Figure 3 shows the interaction between communities and disposal facilities prior to 1982 and the complex transportation and disposal network. Figure 4 shows that there are only two active disposal sites in the County in 1998 (Pine Tree Acres Landfill and the GPCRDA Incinerator) which has significantly improved waste management practices.

A survey was completed of the communities in the planning area, refuse haulers, and disposal facilitates to determine collection, disposal, recycling, and composting practices. The results of the survey are described in the following sections.

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Operator Name: lucidos
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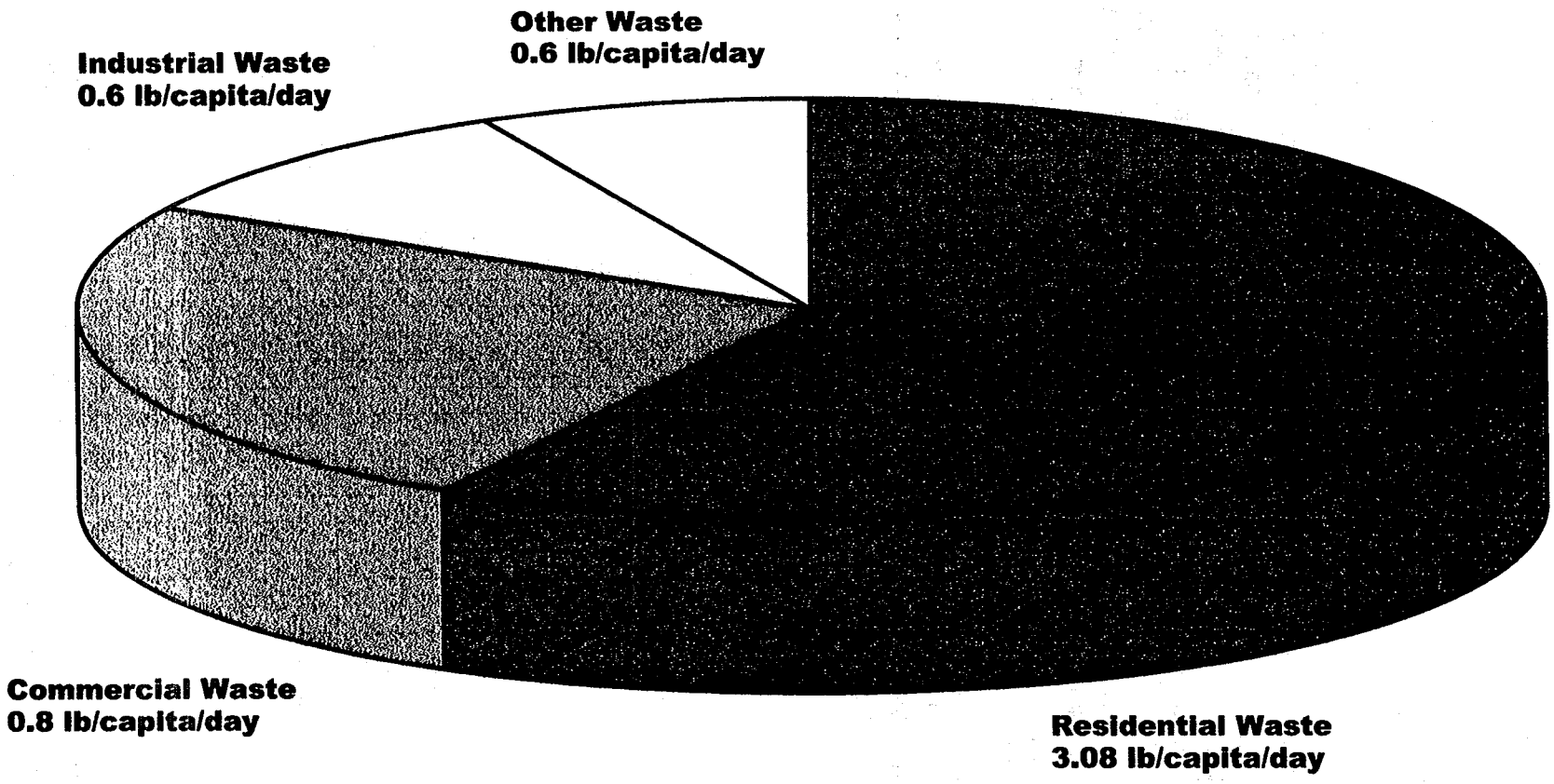

FIGURE 1

RMT INC., MICHIGAN
1143 HIGHLAND DRIVE, SUITE B
ANN ARBOR, MI. 48108-2237
P.O. BOX 991 48106-0991
PHONE: 734-971-7080
FAX: 734-971-9022

MACOMB COUNTY
1998 SOLID WASTE MANAGEMENT PLAN UPDATE

WASTE GENERATION RATES

DRAWN BY:	SJL
APPROVED BY:	WJK
PROJECT NUMBER:	4085.01
FILE NUMBER:	40850108.DWG
DATE:	FEBRUARY 1999

RMT COMPUTER AIDED DESIGN AND DRAFTING

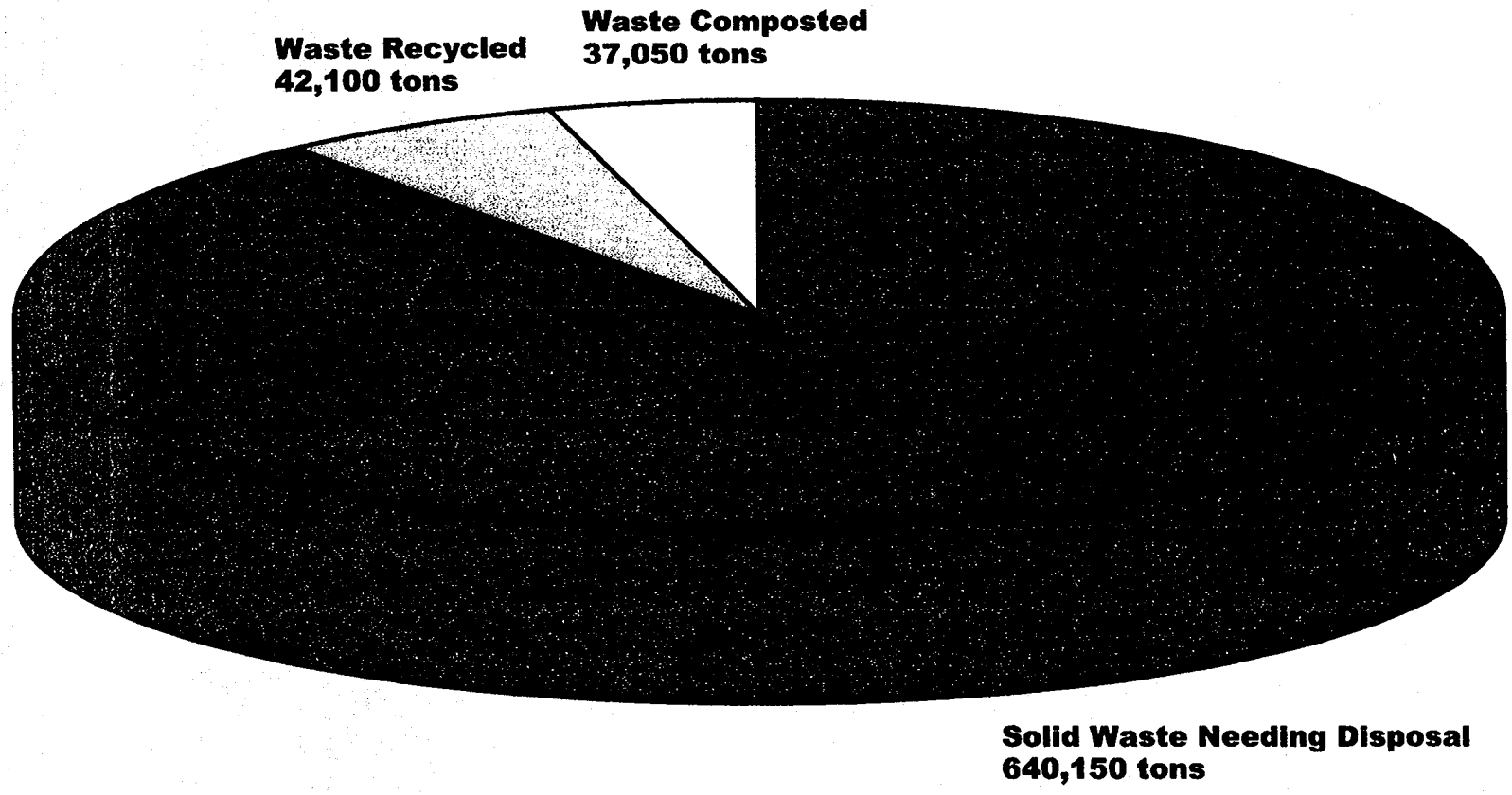

FIGURE 2

RMT INC., MICHIGAN
1143 HIGHLAND DRIVE, SUITE B
ANN ARBOR, MI. 48108-2237
P.O. BOX 991 48106-0991
PHONE: 734-971-7080
FAX: 734-971-9022

MACOMB COUNTY
1998 SOLID WASTE MANAGEMENT PLAN UPDATE

SOLID WASTE NEEDING DISPOSAL

DRAWN BY:	SJL
APPROVED BY:	WJK
PROJECT NUMBER:	4085.01
FILE NUMBER:	40850109.DWG
DATE:	FEBRUARY 1999

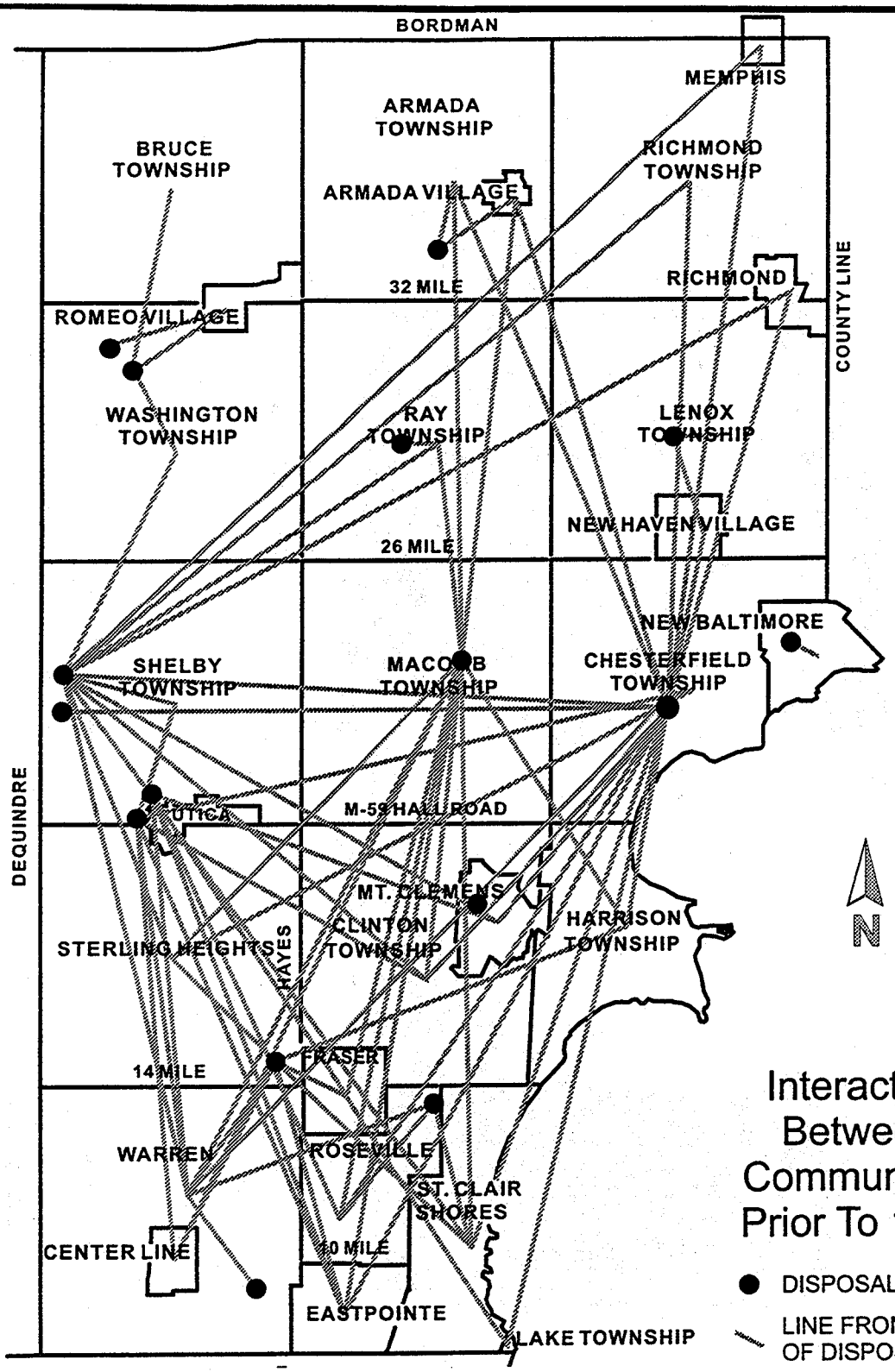

FIGURE PREPARED BY THE MACOMB COUNTY DEPARTMENT OF PLANNING AND ECONOMIC DEVELOPMENT.

FIGURE 3

RMT INC. MICHIGAN	MACOMB COUNTY 1998 SOLID WASTE MANAGEMENT PLAN UPDATE	DRAWN BY: SJL
		APPROVED BY: SJK
		PROJECT NUMBER: 4085.01
	INTERACTION BETWEEN COMMUNITIES PRIOR TO 1982	FILE NUMBER: 40850105.DWG
		DATE: MAY 1998

Drawing Name: J:\04085\01\40850105.dwg Operator Name: saml Dwg Size: 231794 Bytes Plot Time: 1:45.4464 PM
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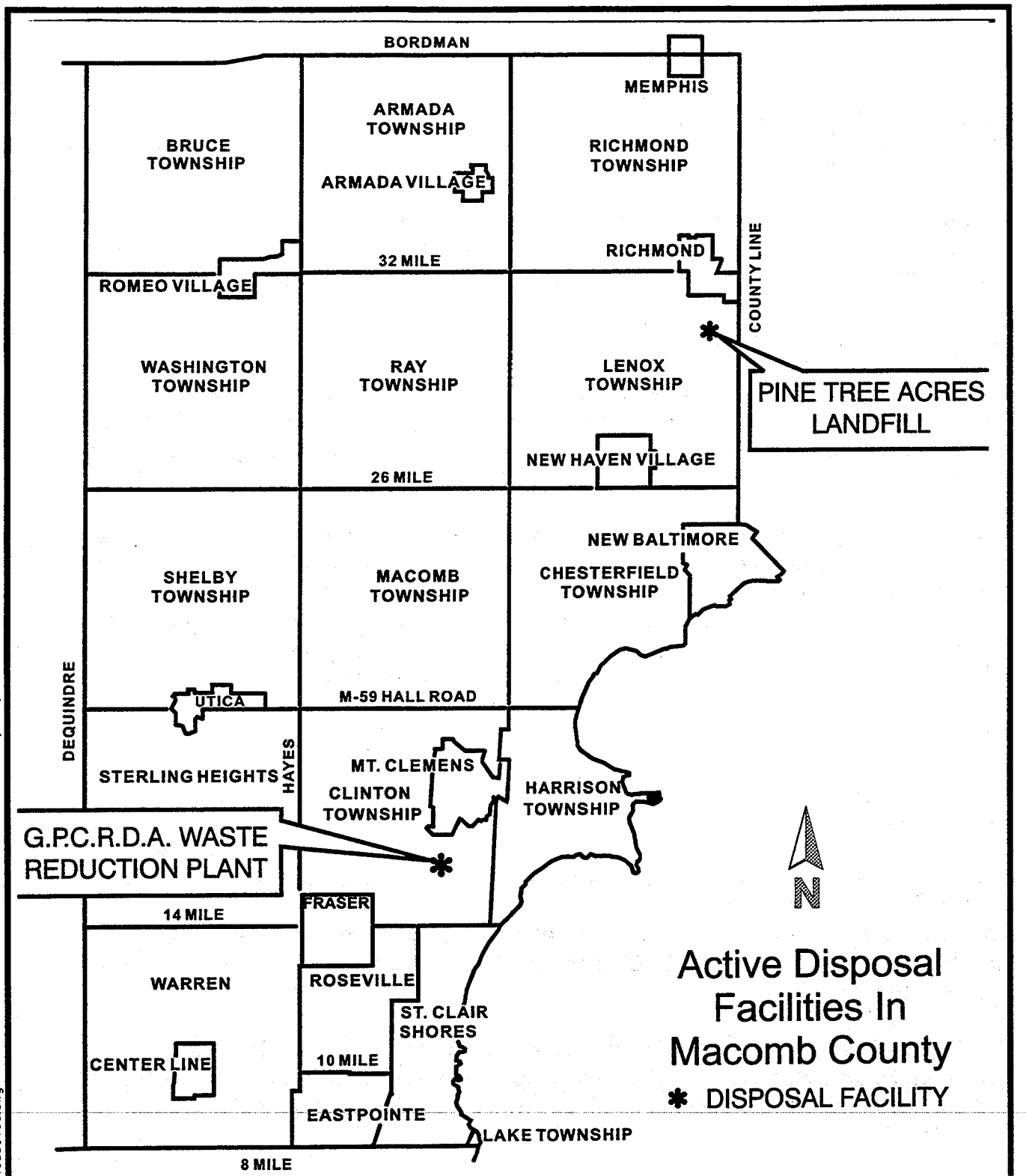

FIGURE PREPARED BY THE MACOMB COUNTY DEPARTMENT OF PLANNING AND ECONOMIC DEVELOPMENT.

FIGURE 4

RMT INC. MICHIGAN	MACOMB COUNTY 1998 SOLID WASTE MANAGEMENT PLAN UPDATE	DRAWN BY: SJL
		APPROVED BY: SJK
		PROJECT NUMBER: 4085.01
	ACTIVE DISPOSAL FACILITIES IN MACOMB COUNTY	FILE NUMBER: 40850106.DWG
		DATE: MAY 1998

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Plot Date: Wednesday, May 20, 1998
Operator Name: saml
Scale: 1"=1'
Drawing Name: J:\04085\01\40850106.dwg

DATA BASE

SOLID WASTE DISPOSAL AREAS

Inventory and description of all solid waste disposal areas within the County are to be utilized by the County to meet its disposal needs for the planning period.

A survey was completed to identify the disposal areas utilized by Macomb County to determine the amounts of solid waste imported and exported and the Macomb County disposal capacity.

Macomb County Disposal Sites

Five disposal sites were identified in Macomb County. They are the Pine Tree Acres Landfill, South Macomb Disposal Authority (SMDA) Transfer Station, Ray Township Transfer Station, Armada Township Transfer Station, and the Warren Transfer Station. A sixth disposal facility, the Grosse Pointe-Clinton Refuse Disposal Authority incinerator, is open but is scheduled to close prior to April 1999.

Pine Tree Acres Landfill The Pine Tree Acres Landfill is a privately owned and operated landfill which has been in operation since June 1987. The landfill is located in a sparsely populated area of Lenox Township on 29 Mile Road. The original site encompassed approximately 160 acres of land. In December 1988, Macomb County approved a 300-acre expansion of the disposal facility, increasing the total area to 460 acres. The projected total remaining capacity of the landfill is estimated to be 59,000,000 in-place cubic yards. Solid waste disposed at the facility originates from both Macomb County and neighboring counties.

SMDA Transfer Station The SMDA Transfer Station was constructed in 1979 and primarily serves the member communities of Eastpointe, St. Clair Shores, Roseville, and Center Line. The facility is publicly owned and is currently operated and managed by BFI under provisions of a ten year contract with the SMDA. This contract expires in 2002. Refuse from the transfer station is taken to the BFI Arbor Hills Landfill in Washtenaw County for final disposal. In 1997 approximately 119,000 tons of refuse was disposed at the transfer station, including 118,000 tons from Macomb County and 1,000 tons from Wayne County.

Ray Township Transfer Station The Ray Township Transfer Station is located on Kuntsman Road in Section 17 of Ray Township. The station consists of a concrete pad and a ramp which allows residents to deposit waste into 40-cubic yard roll-off boxes. A separate roll-off box is used to collect metals. Approximately 1,900 cubic yards of refuse was deposited at the transfer station in 1997. Waste is hauled to the Pine Tree Acres Landfill for final disposal. Scrap metal is sold to an area scrap metal dealer.

Armada Township Transfer Station The Armada Township Transfer Station consists of a packer truck brought to the site of the former Township landfill located on Armada Ridge

Road, just north of 33 Mile Road. The transfer station, funded by Armada Township, is open the second and fourth Saturday of each month for use by Armada Township residents. Approximately 600 cubic yards of refuse is collected each year and disposed in the Pine Tree Acres landfill. City Environmental East operates the transfer station and also provides a compartmentalized recycling container truck two Saturdays per month for the recycling of glass, paper, metals, and plastic.

Warren Transfer Station. The Warren Transfer Station is owned by the City of Warren and operated by City Management. It is located on Flanders Road, approximately one half mile north of 10 Mile Road in the City of Warren. The station was constructed in 1971 and received approximately 46,000 tons of refuse which was hauled to Pine Tree Acres Landfill for final disposal. Waste brought to the facility is weighed and compacted into 75 cubic yard transfer trailers. The transfer station operates 5 ½ days per week and receives refuse from residential, commercial, and industrial haulers.

Grosse Pointe-Clinton Refuse Disposal Authority Incinerator. The Grosse Pointe-Clinton Refuse Disposal Authority incinerator is owned and operated by the Grosse Pointe-Clinton Refuse Disposal Authority since 1972. The incinerator is scheduled to close prior to April 1999. The incinerator serves Clinton Township and Mount Clemens in Macomb County, and Grosse Pointe, Grosse Pointe Farms, Grosse Pointe Park, Grosse Pointe Shores, Grosse Pointe Woods, and Harper Woods in Wayne County. The community members will arrange for refuse disposal once the incinerator shuts down. Current plans are to take waste to the Pine Tree Acres Landfill and/or the Warren Transfer Station.

Out-of-County Disposal Sites

A survey was completed of disposal facilities in other counties to identify which disposal facilities were accepting waste from Macomb County and the quantity of waste exported from Macomb County. The Michigan Department of Environmental Quality 1998 *Report of Solid Waste Landfilled in Michigan* was also used to identify landfills that accepted waste from Macomb County.

Washtenaw County. The disposal facility survey identified that approximately 355,000 cubic yards of waste from Macomb County is disposed in the Arbor Hills Landfill located in Salem Township. This is a 936-acre site with a permitted area of 217 acres. Based on a remaining capacity of 30,500,000 cubic yards, the landfill has a 17.6 year life expectancy. The 1994 Macomb County Solid Waste Management Plan authorized up to 1,500,000 cubic yards of waste into the Arbor Hills Landfill.

Sanilac County. The MDEQ database indicated that Tri-City RDF Landfill accepts approximately 200 cubic yards per year of waste from Macomb County. The 1994 Macomb County Solid Waste Management Plan authorized up to 950 cubic yards per day of waste into the Tri-City Refuse Disposal Facility.

Oakland County. Based on the survey form returned by Oakland Heights Development,

approximately 24,000 cubic yards of waste was disposed from Macomb County communities in 1997. This landfill has approximately 3,500,000 cubic yards of permitted air space, and an estimated life of four years. The MDEQ database indicates that the Eagle Valley RDF accepted approximately 353,000 cubic yards of refuse from Macomb County. Based on available information approximately 377,000 cubic yards of Macomb County waste was disposed in Oakland County disposal facilities in 1997. No definitive amount of authorized waste disposal in Oakland County landfill was identified in the 1994 Macomb County Solid Waste Management Plan. However, the plan authorized the exportation of up to 1,301 cubic yards per day of solid waste to facilities in Oakland County for disposal.

Wayne County The Macomb County survey determined that approximately 19,000 cubic yards of refuse from Macomb County was disposed in the Sauk Trail Hills Development. This landfill has approximately 18,000,000 cubic yards of permitted airspace and an estimated life of 12.5 years. The MDEQ database indicates that approximately 5,000 cubic yards of Macomb County refuse is disposed in the Woodland Meadows Landfill, and approximately 72,000 cubic yards in the Carleton Farms Landfill. Ash from the Grosse Pointe-Clinton Refuse Disposal Authority incinerator (approximately 30,000 tons) is also disposed in the Carleton Farms Landfill. Available data indicates that approximately 126,000 cubic yards of Macomb County waste was disposed in Wayne County landfill in 1997. The 1994 Macomb County Solid Waste Management Plan authorized up to 1,000,000 cubic yards of waste to Wayne County disposal facilities.

Lenawee County No Macomb County waste was identified as being disposed in the Lenawee County disposal facility, the Adrian landfill, even though the 1994 Macomb County Solid Waste Management Plan authorized the disposal of up to 4800 tons per week. This amount was based on waste importation quantities identified in the Lenawee County Solid Waste Management Plan.

Jackson County The Liberty Environmentalist Landfill acknowledged that approximately 30 cubic yards of waste was disposed from Macomb County communities in 1997. This site has 400,000 cubic yards of permitted airspace, and an expected life of 20 years. Jackson County was not identified as a source of Macomb County waste during the completion of the 1994 Macomb County Solid Waste Management Plan.

Shiawassee County The Venice Park RDF indicated that it accepted approximately 80 cubic yards of refuse from Macomb County in 1997. This site has 2,200,000 cubic yards of capacity with future expansion plans that will increase the capacity an additional 13,000,000 cubic yards. The site projects an estimated life of 2 years under present conditions, and 25 years with the proposed expansion.

Based on the results of the Macomb County disposal facility survey, and the MDEQ database from its *Report of Solid Waste Landfilled in Michigan*, Macomb County exports approximately 828,300 cubic yards of waste to out-of-county landfills in 1997. An

additional 30,000 cubic yards of ash produced at the Grosse Pointe-Clinton Refuse Disposal Authority incinerator were disposed at out-of-County disposal facilities.

DATA BASE

SOLID WASTE FACILITY DESCRIPTIONS

FACILITY DESCRIPTIONS

Facility Type: Transfer Station

Facility Name: South Macomb Disposal Authority (SMDA) Transfer Station

County: Macomb Location: Roseville Town: ____ Range: ____ Section(s): ____

Map identifying location included in Attachment Section: ☒ Yes ☐ No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: BFI Arbor Hills Landfill

☒ Public ☐ Private Owner: South Macomb Disposal Authority

Operating Status (check)		Waste Types Received (check all that apply)	
☒	open	☒	residential
☐	closed	☒	commercial
☒	licensed	☒	industrial (solid waste only, no special waste)
☐	unlicensed	☒	construction & demolition
☐	construction permit	☐	contaminated soils
☐	open, but closure pending	☐	special wastes *
		☐	other: ____

* Explanation of special wastes, including a specific list and/or conditions:

Site Size:

Total area of facility property:	10.729	acres
Total area sited for use:	10.729	acres
Total area permitted:	10.729	acres
Operating:	____	acres
Not excavated:	____	acres
Current capacity:	555	☒ tons per day or ☐ yds^3
Estimated lifetime:	N/A	years
Estimated days open per year:	256	days
Estimated yearly disposal volume:	120,000	☒ tons or ☐ yds^3

(if applicable)
Annual energy production:

Landfill gas recovery projects:	N/A	megawatts
Waste-to-energy incinerators:	N/A	megawatts

FACILITY DESCRIPTIONS

Facility Type: Landfill

Facility Name: Arbor Hills

County: Washtenaw Location: Salem Twp. Town:____Range: _____Section(s):13

Map identifying location included in Attachment Section: ☒ Yes ☐ No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: N/A

☐ Public ☒ Private Owner: BFI

Operating Status (check)		Waste Types Received (check all that apply)	
☒	open	☒	residential
☐	closed	☒	commercial
☒	licensed	☒	industrial
☐	unlicensed	☒	construction & demolition
☒	construction permit	☒	contaminated soils
☐	open, but closure pending	☒	special wastes *
		☒	other: Arbor Hills is also home to a recycling center and compost facility.

* Explanation of special wastes, including a specific list and/or conditions:
Non-hazardous (by Fed, State, & local regs.) Industrial process waste (i.e, sludges, filter cakes) and asbestos.

Site Size:

Total area of facility property:	936	acres
Total area sited for use:	356	acres
Total area permitted:	217	acres
Operating:	113	acres
Not excavated:	104	acres
Current capacity:	30,500,000	☐tons or ☒yds^3
Estimated lifetime:	17.6	years
Estimated days open per year:	265	days
Estimated yearly disposal volume:	3,500,000	☐tons or ☒yds^3

(if applicable)
Annual energy production:

Landfill gas recovery projects:	18	megawatts
Waste-to-energy incinerators:	N/A	megawatts

FACILITY DESCRIPTIONS

Facility Type: Landfill

Facility Name: Venice Park RDF

County: Shiawassee Location: Venice Twp. Town:_____ Range: R4E Section(s): 27

Map identifying location included in Attachment Section: ☒ Yes ☐ No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: N/A

☐ Public ☒ Private Owner: Waste Management

Operating Status (check)		Waste Types Received (check all that apply)	
☒	open	☒	residential
☐	closed	☒	commercial
☒	licensed	☒	industrial
☐	unlicensed	☒	construction & demolition
☒	construction permit	☒	contaminated soils
☐	open, but closure pending	☒	special wastes *
		☒	other: Solidification

* Explanation of special wastes, including a specific list and/or conditions:
Asbestos, Medical Waste; Venice Park RDF is also licensed to solidify non-hazardous liquids on site.

Site Size:

Total area of facility property:	80	acres
Total area sited for use:	67	acres
Total area permitted:	67	acres
Operating:	42	acres
Not excavated:	2.5	acres - closed 22.5 acres
Current capacity:	2,200,000	☐tons or ☒ yds^3
Future capacity:	13,000,000	
Estimated lifetime:	2	years- future expansion 25 years
Estimated days open per year:	281	days
Estimated yearly disposal volume:	1,222,109	☐ tons or ☒ yds^3

(if applicable)
Annual energy production:

Landfill gas recovery projects:	11,500	megawatts
Waste-to-energy incinerators:	N/A	megawatts

FACILITY DESCRIPTIONS

Facility Type: Landfill

Facility Name: Liberty Environmentalist

County: Jackson Location: Liberty Twp. Town:____ Range: ____Section(s): 1

Map identifying location included in Attachment Section: ☒ Yes ☐ No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: N/A

☐ Public ☒Private Owner: Liberty Environmentalist

Operating Status (check)		Waste Types Received (check all that apply)	
☒	open	☐	residential
☐	closed	☐	commercial
☒	licensed	☒	industrial
☐	unlicensed	☒	construction & demolition
☐	construction permit	☐	contaminated soils
☐	open, but closure pending	☒	special wastes *
		☐	other: _____

* Explanation of special wastes, including a specific list and/or conditions:
Shredder fluff & foundry sand.

Site Size:

Total area of facility property:	222	acres
Total area sited for use:	65	acres
Total area permitted:	25	acres
Operating:	7.5	acres
Not excavated:	40	acres
Current capacity:	400,000	☐ tons or ☒ yds^3
Estimated lifetime:	20	years
Estimated days open per year:	300	days
Estimated yearly disposal volume:	155,000	☐ tons or ☒ yds^3

(if applicable)
Annual energy production:

Landfill gas recovery projects:	N/A	megawatts
Waste-to-energy incinerators:	N/A	megawatts

FACILITY DESCRIPTIONS

Facility Type: Landfill

Facility Name: Sauk Trail Hills Development

County: Wayne Location: Canton Twp. Town:____ Range: ____Section(s): 35

Map identifying location included in Attachment Section: ☒ Yes ☐ No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: N/A

☐ Public ☒Private Owner: Allied

Operating Status (check)		Waste Types Received (check all that apply)	
☒	open	☒	residential
☐	closed	☒	commercial
☒	licensed	☒	industrial
☐	unlicensed	☒	construction & demolition
☐	construction permit	☒	contaminated soils
☐	open, but closure pending	☒	special wastes *
		☐	other: _____

* Explanation of special wastes, including a specific list and/or conditions:
Non-hazardous material.

Site Size:

Total area of facility property:	200.7	acres
Total area sited for use:	160.2	acres
Total area permitted:	50.7	acres
Operating:	50.7	acres
Not excavated:	90.7	acres
Current capacity:	18,000,000	☐ tons or ☒ yds^3
Estimated lifetime:	12.5	years
Estimated days open per year:	309	days
Estimated yearly disposal volume:	1,440,000	☐ tons or ☒ yds^3

(if applicable)
Annual energy production:

Landfill gas recovery projects:	N/A	megawatts
Waste-to-energy incinerators:	N/A	megawatts

FACILITY DESCRIPTIONS

Facility Type: Landfill

Facility Name: Oakland Heights Development

County: Oakland Location: Auburn Town:____ Range: ____Section(s): 2

Map identifying location included in Attachment Section: ☒ Yes ☐ No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: N/A

☐ Public ☒ Private Owner: Allied

Operating Status (check)		Waste Types Received (check all that apply)	
☒	open	☒	residential
☐	closed	☒	commercial
☒	licensed	☒	industrial
☐	unlicensed	☒	construction & demolition
☐	construction permit	☒	contaminated soils
☐	open, but closure pending	☒	special wastes *
		☐	other: _____

* Explanation of special wastes, including a specific list and/or conditions:
Any non-hazardous material

Site Size:

Total area of facility property:	179.74	acres
Total area sited for use:		acres
Total area permitted:	63.87	acres
Operating:	63.87	acres
Not excavated:	22.1	acres
Current capacity:	3,500,000	☐ tons or ☒ yds^3
Estimated lifetime:	4	years
Estimated days open per year:	309	days
Estimated yearly disposal volume:	500,000	☐ tons or ☒ yds^3

(if applicable)
Annual energy production:

Landfill gas recovery projects:	N/A	megawatts
Waste-to-energy incinerators:	N/A	megawatts

FACILITY DESCRIPTIONS

Facility Type: Landfill

Facility Name: Tri-City RDF

County: Sanilac Location: Town: 12N Range: 15E Section(s): 32

Map identifying location included in Attachment Section: ☒ Yes ☐ No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: N/A

☐ Public ☒ Private Owner: Waste Management

Operating Status (check)		Waste Types Received (check all that apply)	
☒	open	☒	residential
☐	closed	☒	commercial
☒	licensed	☒	industrial
☐	unlicensed	☒	construction & demolition
☒	construction permit	☒	contaminated soils
☐	open, but closure pending	☒	special wastes *
		☐	other: _____

* Explanation of special wastes, including a specific list and/or conditions:

Paper Pulp, shredded foam, food product waste.

Site Size:

Total area of facility property:	195.4	acres
Total area sited for use:	195.4	acres
Total area permitted:	125	acres
Operating:	31.6	acres
Not excavated:	93.4	acres
Current capacity:	10,780,000	☐ tons or ☒ yds^3
Estimated lifetime:	22	years
Estimated days open per year:	272	days
Estimated yearly disposal volume:	330,000	☐ tons or ☒ yds^3

(if applicable)
Annual energy production:

Landfill gas recovery projects:	N/A	megawatts
Waste-to-energy incinerators:	N/A	megawatts

FACILITY DESCRIPTIONS

Facility Type: Landfill

Facility Name: Woodland Meadows

County: Wayne Location: Town: 3S Range: 8E Section(s): 1

Map identifying location included in Attachment Section: ☒ Yes ☐ No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: N/A

☐ Public ☒ Private Owner: Waste Management

Operating Status (check)		Waste Types Received (check all that apply)	
☒	open	☒	residential
☐	closed	☒	commercial
☒	licensed	☒	industrial
☐	unlicensed	☒	construction & demolition
☒	construction permit	☒	contaminated soils
☐	open, but closure pending	☒	special wastes *
		☐	other: _____

* Explanation of special wastes, including a specific list and/or conditions:
Sludges - provided they are at least 30% solids

Site Size:

Total area of facility property:	214	acres
Total area sited for use:	214	acres
Total area permitted:	148	acres
Operating:	70	acres
Not excavated:	78	acres
Current capacity:	26,520,800	☐ tons or ☒ yds^3
Estimated lifetime:	19.8	years
Estimated days open per year:	305	days
Estimated yearly disposal volume:	1,340,200	☐ tons or ☒ yds^3

(if applicable)
Annual energy production:

Landfill gas recovery projects:	400.00	MMBTU
Waste-to-energy incinerators:	N/A	megawatts

FACILITY DESCRIPTIONS

Facility Type: Landfill

Facility Name: Carleton Farms

County: Wayne Location: Town:_____ Range: _____Section(s): 36

Map identifying location included in Attachment Section: ☒ Yes ☐ No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: N/A

☐ Public ☒ Private Owner: REPUBLIC

Operating Status (check)		Waste Types Received (check all that apply)	
☒	open	☐	residential
☐	closed	☐	commercial
☒	licensed	☐	industrial
☐	unlicensed	☐	construction & demolition
☐	construction permit	☐	contaminated soils
☐	open, but closure pending	☐	special wastes *
		☐	other: _____

* Explanation of special wastes, including a specific list and/or conditions:
Carleton Farms accepted 30,000 tons of incinerator ash from the Gross Pointe-Clinton Refuse Disposal Authority incinerator, in addition to 72,000 cubic yards of Type II waste from Macomb County.

Site Size:

Total area of facility property:	_____	acres
Total area sited for use:	_____	acres
Total area permitted:	_____	acres
Operating:	_____	acres
Not excavated:	_____	acres
Current capacity:	_____	☐ tons or ☐ yds^3
Estimated lifetime:	_____	years
Estimated days open per year:	_____	days
Estimated yearly disposal volume:	_____	☐ tons or ☐ yds^3

(if applicable)
Annual energy production:

Landfill gas recovery projects:	_____	megawatts
Waste-to-energy incinerators:	_____	megawatts

FACILITY DESCRIPTIONS

Facility Type: Transfer Station

Facility Name: Ray Township Transfer Station

County: Macomb Location: Ray Twp. Town: 4N Range: 13E Section(s): 17

Map identifying location included in Attachment Section: ☒ Yes ☐ No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes:

☒ Public ☐ Private Owner: Ray Township

Operating Status (check)		Waste Types Received (check all that apply)	
☒	open	☒	residential
☐	closed	☐	commercial
☐	licensed	☐	industrial
☐	unlicensed	☐	construction & demolition
☐	construction permit	☐	contaminated soils
☐	open, but closure pending	☒	special wastes *
		☐	other: _____

* Explanation of special wastes, including a specific list and/or conditions:
Used motor oil picked up by Safety-Kleen.

Site Size:

Total area of facility property:	9.08	acres
Total area sited for use:	9.08	acres
Total area permitted:	9.08	acres
Operating:	2	acres
Not excavated:	0	acres
Current capacity:	_____	☐ tons or ☐ yds^3
Estimated lifetime:	_____	years
Estimated days open per year:	12	days
Estimated yearly disposal volume:	1,920	☐ tons or ☒ yds^3

(if applicable)
Annual energy production:

Landfill gas recovery projects:	N/A	megawatts
Waste-to-energy incinerators:	N/A	megawatts

FACILITY DESCRIPTIONS

Facility Type: Waste Reduction Plant

Facility Name: Grosse Pointe-Clinton Refuse Disposal Authority

County: Macomb Location: Clinton Twp. Town:____ Range: ____Section(s): _____

Map identifying location included in Attachment Section: ☒ Yes ☐ No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: Carleton Farms

☒ Public ☐ Private Owner: Grosse Pointe-Clinton Refuse Disposal Authority

Operating Status (check)		Waste Types Received (check all that apply)	
☒	open	☒	residential
☐	closed	☒	commercial
☒	licensed	☐	industrial
☐	unlicensed	☐	construction & demolition
☐	construction permit	☐	contaminated soils
☐	open, but closure pending	☐	special wastes *
		☐	other: _____

* Explanation of special wastes, including a specific list and/or conditions:

Site Size:

Total area of facility property:	67	acres
Total area sited for use:	5	acres
Total area permitted:	67	acres
Operating:		acres
Not excavated:		acres
Current capacity:	600 TPD	☐ tons or ☐ yds^3
Estimated lifetime:		years
Estimated days open per year:	275	days
Estimated yearly disposal volume:	125,600	☒ tons or ☐ yds^3

(if applicable)
Annual energy production:

Landfill gas recovery projects:	N/A	megawatts
Waste-to-energy incinerators:	N/A	megawatts

FACILITY DESCRIPTIONS

Facility Type: Landfill

Facility Name: Pine Tree Acres

County: Macomb Location: Lenox Twp. Town: 4N Range: 14E Section(s): 23,24

Map identifying location included in Attachment Section: ☒ Yes ☐ No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: N/A

☐ Public ☒ Private Owner: Waste Management

Operating Status (check)		Waste Types Received (check all that apply)	
☒	open	☒	residential
☐	closed	☒	commercial
☒	licensed	☒	industrial
☐	unlicensed	☒	construction & demolition
☐	construction permit	☒	contaminated soils
☐	open, but closure pending	☒	special wastes *
		☐	other: _____

* Explanation of special wastes, including a specific list and/or conditions:

Sludge, Auto Fluff

Site Size:

Total area of facility property:	568	acres
Total area sited for use:	568	acres
Total area permitted:	161.2	acres
Operating:	86.1	acres
Not excavated:	75.1	acres
Current capacity:	7,200,000	☐ tons or ☒ yds^3 (Remaining future capacity 59,000,000 yd^3)
Estimated lifetime:	8	years (Future expansion 27 years)
Estimated days open per year:	286	days
Estimated yearly disposal volume:	1,800,000	☐ tons or ☒ yds^3

(if applicable)
Annual energy production:

Landfill gas recovery projects:	4	megawatts
Waste-to-energy incinerators:	N/A	megawatts

FACILITY DESCRIPTIONS

Facility Type: Landfill

Facility Name: Eagle Valley RDF

County: Oakland Location: Town: 4N Range: 10E Section(s): 26, 27

Map identifying location included in Attachment Section: ☒ Yes ☐ No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: N/A

Public ☒ Private Owner: Waste Management

Operating Status (check)		Waste Types Received (check all that apply)	
☒	open	☒	residential
☐	closed	☒	commercial
☒	licensed	☒	industrial
☐	unlicensed	☒	construction & demolition
☒	construction permit	☒	contaminated soils
☐	open, but closure pending	☒	special wastes *
		☒	other: _____

* Explanation of special wastes, including a specific list and/or conditions:

Contaminated soils, chemical containing equipment, coal ash, filter cake, contaminated residuals, incinerator ash, industrial process waste, non-friable asbestos, treated medical wastes, treatment plant sludge, paint filters.

Site Size:

Total area of facility property:	330	acres
Total area sited for use:	330	acres
Total area permitted:	89	acres
Operating:	76	acres
Not excavated:	13	acres
Current capacity:	4,700,000	☐ tons or ☒ yds^3
Estimated lifetime:	5.9	years
Estimated days open per year:	286	days
Estimated yearly disposal volume:	1,650,000	☐ tons or ☒ yds^3

(if applicable)
Annual energy production:

Landfill gas recovery projects:	N/A	megawatts
Waste-to-energy incinerators:	N/A	megawatts

FACILITY DESCRIPTIONS

Facility Type: Transfer Station

Facility Name: Warren Transfer Station

County: Macomb Location: Town:_____ Range: _____Section(s): _____

Map identifying location included in Attachment Section: ☒ Yes ☐ No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: Pine Tree Acres Landfill

☒ Public ☐ Private Owner: City of Warren

Operating Status (check)		Waste Types Received (check all that apply)	
☒	open	☒	residential
☐	closed	☒	commercial
☐	licensed	☐	industrial
☐	unlicensed	☐	construction & demolition
☐	construction permit	☐	contaminated soils
☐	open, but closure pending	☐	special wastes *
		☐	other: _____

* Explanation of special wastes, including a specific list and/or conditions:

Site Size:

Total area of facility property:	_____	acres
Total area sited for use:	_____	acres
Total area permitted:	_____	acres
Operating:	_____	acres
Not excavated:	_____	acres
Current capacity:	_____	☐ tons or ☐ yds^3
Estimated lifetime:	_____	years
Estimated days open per year:	_____	days
Estimated yearly disposal volume:	45,500	☒ tons or ☐ yds^3 From Macomb County

(if applicable)
Annual energy production:

Landfill gas recovery projects:	N/A	megawatts
Waste-to-energy incinerators:	N/A	megawatts

FACILITY DESCRIPTIONS

Facility Type: Transfer Station

Facility Name: Armada Township Transfer Station

County: Macomb Location: Town:_____ Range: _____Section(s): _____

Map identifying location included in Attachment Section: ☒ Yes ☐ No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: N/A

☒ Public ☐ Private Owner: Armada Township

Operating Status (check)		Waste Types Received (check all that apply)	
☒	open	☐	residential
☐	closed	☐	commercial
☐	licensed	☐	industrial
☐	unlicensed	☐	construction & demolition
☐	construction permit	☐	contaminated soils
☐	open, but closure pending	☐	special wastes *
		☐	other: _____

* Explanation of special wastes, including a specific list and/or conditions:

Site Size:

Total area of facility property:	_____	acres
Total area sited for use:	_____	acres
Total area permitted:	_____	acres
Operating:	_____	acres
Not excavated:	_____	acres
Current capacity:	_____	☐ tons or ☐ yds^3
Estimated lifetime:	_____	years
Estimated days open per year:	_____	days
Estimated yearly disposal volume:	_____	☐ tons or ☐ yds^3

(if applicable)
Annual energy production:

Landfill gas recovery projects:	N/A	megawatts
Waste-to-energy incinerators:	N/A	megawatts

FACILITY DESCRIPTIONS

Facility Type: Landfill

Facility Name: Adrian Landfill

County: Lenawee Location: Palmyra Twp. Town:_____ Range: _____Section(s): 6, 7

Map identifying location included in Attachment Section: ☒ Yes ☐ No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: N/A

☐ Public ☒ Private Owner: ALLIED

Operating Status (check)		Waste Types Received (check all that apply)	
☒	open	☒	residential
☐	closed	☒	commercial
☒	licensed	☒	industrial
☐	unlicensed	☒	construction & demolition
☐	construction permit	☒	contaminated soils
☐	open, but closure pending	☒	special wastes *
		☐	other: _____

* Explanation of special wastes, including a specific list and/or conditions:

Asbestos, sludge: per environmental guidelines.

Site Size:

Total area of facility property:	421	acres
Total area sited for use:	287	acres
Total area permitted:	39.94	acres
Operating:	19.49	acres
Not excavated:	20.45	acres
Current capacity:	2,002,000	☐ tons or ☒ yds^3
Estimated lifetime:	6.83	years
Estimated days open per year:	307	days
Estimated yearly disposal volume:	97,731	☐ tons or ☒ yds^3

(if applicable)
Annual energy production:

Landfill gas recovery projects:	N/A	megawatts
Waste-to-energy incinerators:	N/A	megawatts

FACILITY DESCRIPTIONS

Facility Type: Landfill (Type III)

Facility Name: Standard Environmental Services - Rockwood Landfill

County: Monroe Location: Berlin Twp. Town:_____ Range: _____Section(s): 6, 7

Map identifying location included in Attachment Section: ☒ Yes ☐ No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: N/A

☐ Public ☒ Private Owner: Standard Disposal

Operating Status (check)		Waste Types Received (check all that apply)	
☒	open	☐	residential
☐	closed	☐	commercial
☒	licensed	☒	industrial
☐	unlicensed	☒	construction & demolition
☒	construction permit	☐	contaminated soils
☐	open, but closure pending	☒	special wastes *
		☐	other: _____

* Explanation of special wastes, including a specific list and/or conditions:

Low hazard industrial wastes and non-hazardous industrial wastes

Site Size:

Total area of facility property:	209.46	acres
Total area sited for use:	147.74	acres
Total area permitted:	209.46	acres
Operating:	10.92	acres
Not excavated:	136.82	acres
Current capacity:	21,765,000	☐ tons or ☒ yds^3
Estimated lifetime:	35	years
Estimated days open per year:	286	days
Estimated yearly disposal volume:	1,400,000	☐ tons or ☒ yds^3

(if applicable)
Annual energy production:

Landfill gas recovery projects:	N/A	megawatts
Waste-to-energy incinerators:	N/A	megawatts

DATA BASE

SOLID WASTE COLLECTION SERVICES AND TRANSPORTATION INFRASTRUCTURE

The following describes the solid waste collection services and transportation infrastructure that will be utilized within the County to collect and transport solid waste.

Residential refuse is collected by private haulers in all Macomb County communities, except the City of Warren, which provides municipal collection. Generally, residential and commercial waste is collected by three large waste collection firms and their associates. Information was not available for the Macomb County communities served by Laidlaw. The following table indicates which firms collect in each community. There are other small hauling firms operating in Macomb County that collect industrial waste, building and demolition waste, and roofing materials. The amounts of waste collected by these small haulers is negligible when compared to the waste quantities collected by the three large hauling firms.

COMMUNITIES	HAULERS	
	BFI	Waste Management
Armada, Village	x	x
Armada Twp.		X
Bruce Twp.	x	x
Center Line	x	
Chesterfield	x	x
Clinton Twp.		X
Eastpointe	x	
Fraser		x
Harrison Twp.		X
Lenox Twp.	x	x
Macomb Twp.	x	x
Memphis		x
Mt. Clemens		x
New Baltimore		x
Ray Twp.		
Richmond		x
Richmond Twp.		X
Romeo		x
Roseville		x
St. Clair Shores	x	
New Haven		x

COMMUNITIES	HAULERS	
	BFI	Waste Management
Shelby Twp.		X
Sterling Hgts.		X
Utica	X	
Warren*		
Washington Twp.	X	X

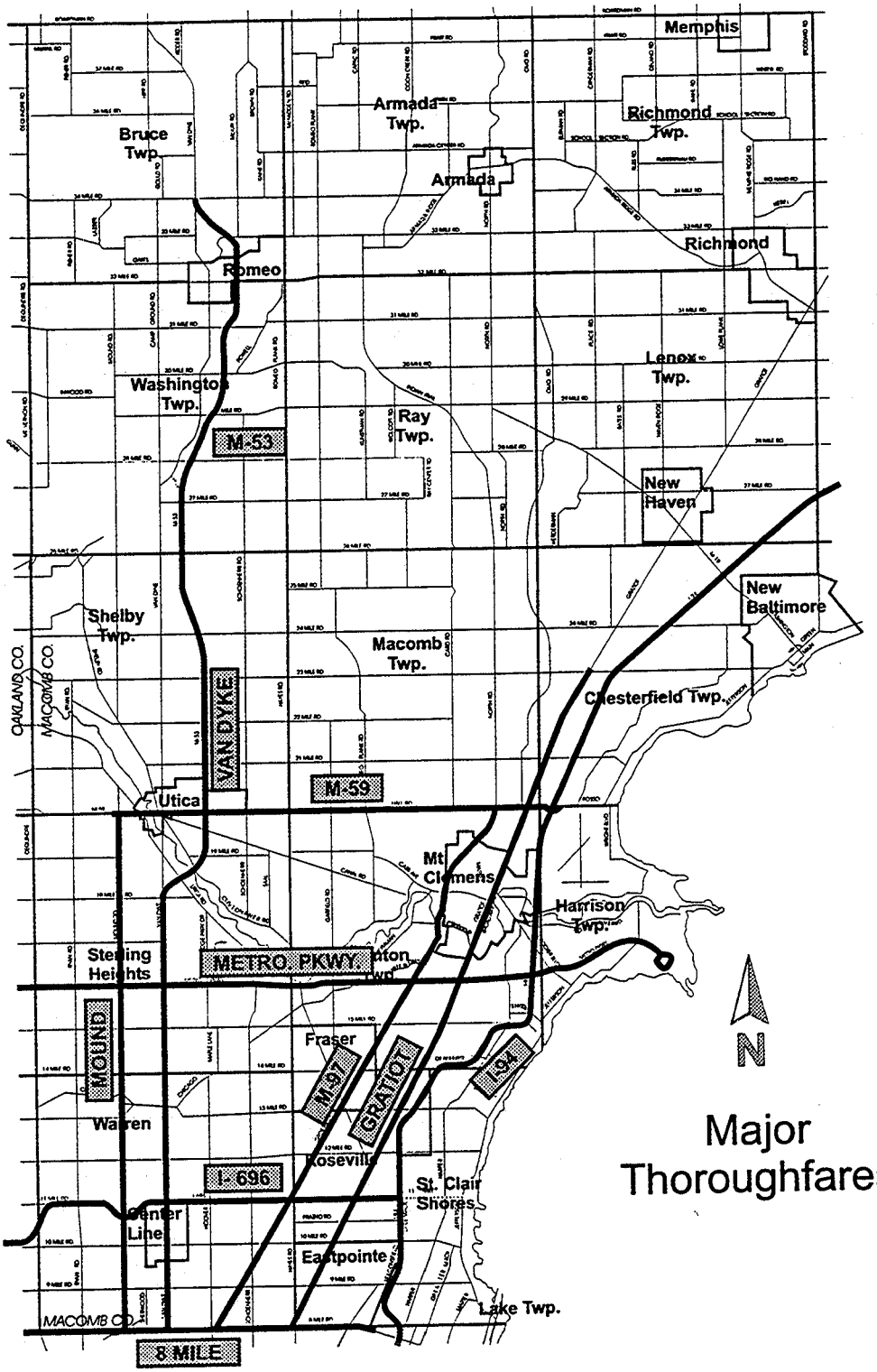
*provides municipal collection

Residential waste is generally collected once each week at the curb-side. Plastic bags and/or cans are most commonly used to store waste for curb-side collection. Private haulers either have agreements with municipalities to collect residential waste, or contract directly with individual homeowners. Commercial and industrial waste are primarily serviced by BFI, Standard Disposal, and Waste Management.

An extensive transportation network has been developed in Macomb County. Interstate 94 traverses the eastern portion of the County and links it to the northeast with Port Huron and Canada, and to the south and west to Detroit and Chicago. The M-53 Freeway runs north from 18 ½ Mile Road in Sterling Heights to 28 Mile Road in Washington Township. Interstate 696 in southern Macomb County follows Eleven Mile Road, connecting Interstate 94 to Interstate 75 and Interstate 96 in Oakland County. In addition, improvements to M-59 will provide a six to eight lane divided highway from I-94 on the eastern side of Macomb County to the Macomb County boundary on the west side. These improvements will be completed by the end of 1998.

The major north-south thoroughfares in Macomb County are Jefferson, Harper, Gratiot, Groesbeck, Van Dyke and Mound Roads (Figure 5). In the east-west direction Sixteen Mile Road is a divided highway known as the Metropolitan Parkway. Eight, Ten, Twelve, and Fourteen Mile Roads,. and M-59 are other major routes for east west traffic.

The major routes used for refuse hauling vehicles traveling north-south in the County are Van Dyke (M-53), Groesbeck (M-97), Mound, North Avenue, I-94, and Gratiot Avenue (M-53). Harper Avenue is used by vehicles traveling to and from the St. Clair Shores area and to the Grosse Pointe-Clinton Refuse Disposal Authority incinerator. East-west travel is accomplished by using several of the Mile Roads in the southern portion of the County. 29 Mile Road in the northern portion of the County, is used extensively by haulers transporting waste to the Pine Tree Acres Landfill. Other county roads are also used, generally for short distances in traveling to and from the major routes to disposal areas.



Major Thoroughfares

FIGURE 5

RMT INC. MICHIGAN	MACOMB COUNTY 1998 SOLID WASTE MANAGEMENT PLAN UPDATE	DRAWN BY: SJL
		APPROVED BY: SJK
		PROJECT NUMBER: 4085.01
	MAJOR THOROUGHFARES	FILE NUMBER: 40850107.DWG
		DATE: MAY 1998

Plot Time: 09:27:3897 AM
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Drawing Name: J:\04085\01\40850107.dwg

DATA BASE

EVALUATION OF DEFICIENCIES AND PROBLEMS

The following is a description of problems or deficiencies in the existing solid waste system.

The Grosse Pointe-Clinton Refuse Disposal Authority incinerator is scheduled to cease operations within the next 12 months, prior to April 1999. Member communities of the Authority will have to redirect their waste to sanitary landfills. The Pine Tree Acres landfill has sufficient capacity to accommodate this increased waste load during the next five and 10 year planning periods. There were no other apparent deficiencies identified in the existing solid waste system based on survey information from municipalities, refuse haulers, and disposal facilities.

DATA BASE

DEMOGRAPHICS

The following presents the current and projected population densities for five and ten year periods, identification of current and projected centers of solid waste generation including industrial solid waste for five and ten year periods as related to the Selected Solid Waste Management System for the next five and ten year periods. Solid waste generation data is expressed in tons or cubic yards. If it was extrapolated from yearly data, it was calculated using 365 days per year or another number of days as indicated.

Population projections and waste generation rates have been previously noted in the Plan Section "Database" for all communities in the planning area. These projections show that the center of waste generation and population density are located in the southern part of the County. The following table provides information on the population and waste generation rates for this area.

Community	1999 Population	% of Macomb County Population	Total Waste Generation, TPY
Center Line	8,337	1.1	7,729
Clinton Twp.	96,836	12.5	89,777
Eastpointe	34,527	4.5	32,010
Fraser	15,135	2.0	14,032
Harrison Twp.	26,105	3.4	24,202
Mt. Clemens	17,685	2.3	16,396
Roseville	49,757	6.3	46,130
St. Clair Shores	65,277	8.4	60,518
Sterling Heights	119,283	15.4	110,587
Warren	137,328	17.6	127,317
TOTAL	**504,993**	**73.5**	**468,180**

These communities have approximately 74% of the population and generate the largest quantity of waste. The center for waste generation for industrial waste is likely along the industrial corridors in Warren and Sterling Heights. Figure 6 shows the Center of Waste Generation.

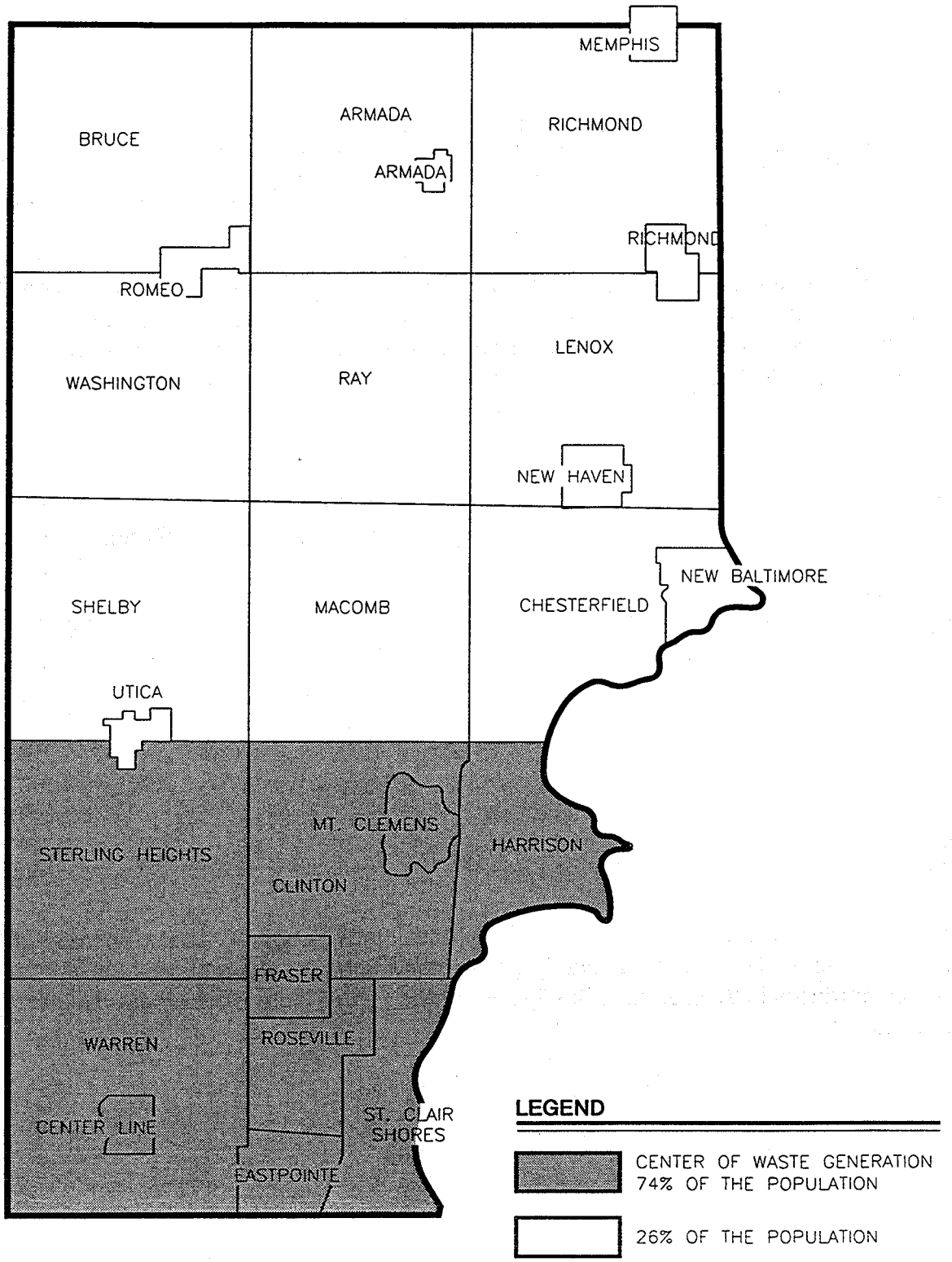


FIGURE 6

RMT INC. MICHIGAN	MACOMB COUNTY 1998 SOLID WASTE MANAGEMENT PLAN UPDATE	DRAWN BY: SJL
		APPROVED BY: SJK
		PROJECT NUMBER: 4085.01
	CENTER OF WASTE GENERATION	FILE NUMBER: 40850104.DWG
		DATE: MAY 1998

Drawing Name: J:\04085\01\40850104.dwg Operator Name: saml Scale: 1"=1' Dwg Size: 225403 Bytes Plot Date: Thursday, May 14, 1998 Plot Time: 09:35:0914 AM Attached Xref's: No xref's Attached.

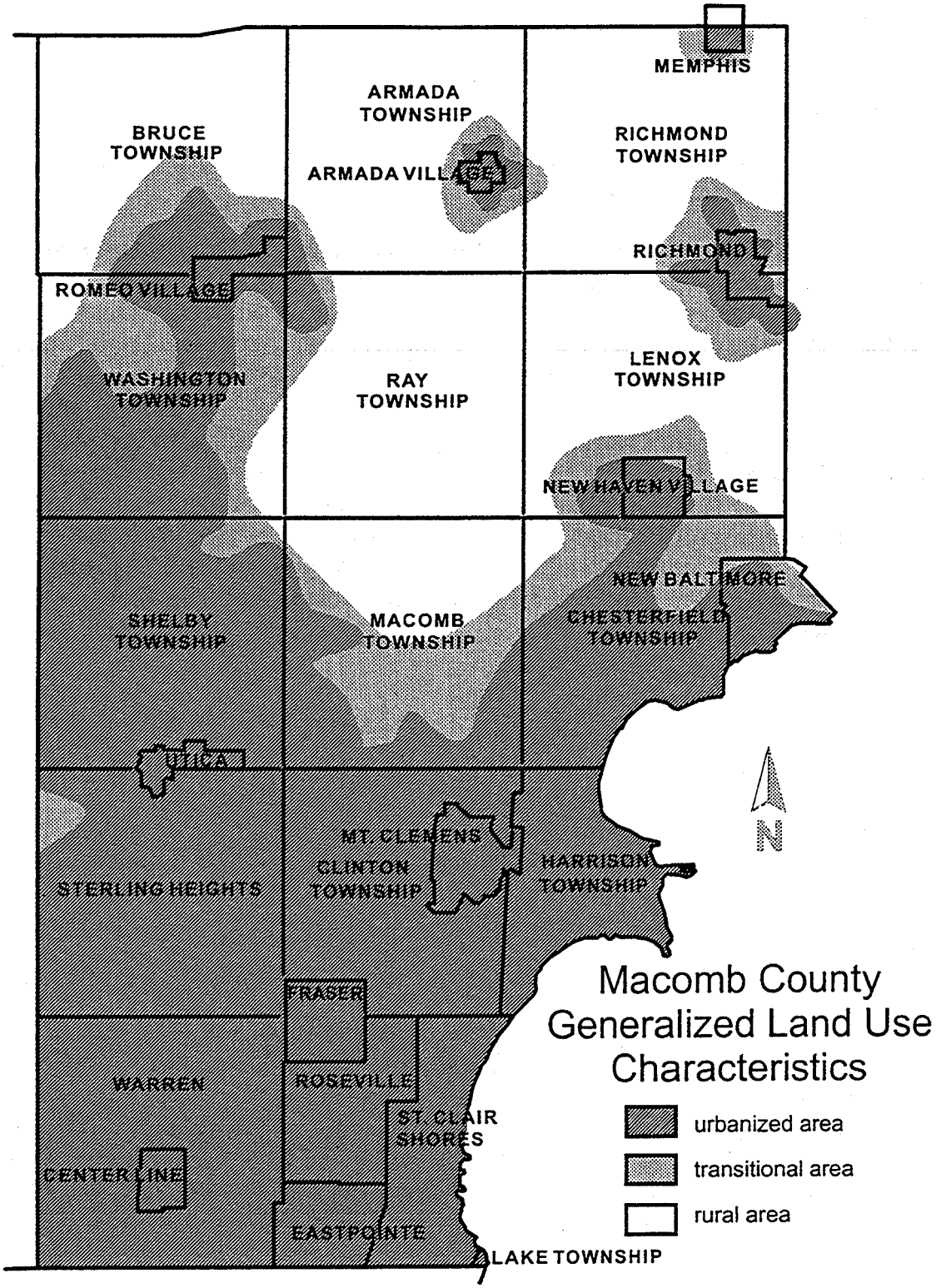
DATA BASE

LAND DEVELOPMENT

The following describes current and projected land development patterns as related to the Selected Solid Waste Management System for the next five and ten year periods.

Land use patterns in Macomb County range from commercial, industrial and residential in the highly populated southern portion of the County to mainly open space and agricultural in the rural northern sections as shown in Figure 7. Commercial and industrial land use also exists near the communities of Utica, Romeo, Richmond, New Haven, and New Baltimore in the northern portion of the County.

Over the next five years Shelby, Macomb, Chesterfield, and Washington Townships will continue to develop, with single family dwellings being the dominant use in these four communities. There will continue to be a population shift from the southern portion of the County to a more centralized location in the County. The completion of M-59 will cause further commercial growth in the communities located along this corridor. The northern tier of communities will have limited growth, as these communities are not completely served by sewer and water.



SOURCE: 1995 Macomb County Land Use Study

FIGURE 7

RMT INC. MICHIGAN	MACOMB COUNTY 1998 SOLID WASTE MANAGEMENT PLAN UPDATE	DRAWN BY: SJL APPROVED BY: SJK
	MACOMB COUNTY GENERALIZED LAND USE CHARACTERISTICS	PROJECT NUMBER: 4085.01 FILE NUMBER: 40850102.DWG DATE: MAY 1998

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DATA BASE

SOLID WASTE MANAGEMENT ALTERNATIVES (attach additional pages as necessary)

The following briefly describes all solid waste management systems considered by the County and how each alternative will meet the needs of the County. The manner of evaluation and ranking of each alternative is also described. Details regarding the Selected Alternatives are located in the following section. Details regarding each non-selected alternative are located in Appendix B.

The existing solid waste management system provides for the proper collection, transport and disposal of solid waste in the Macomb County planning area. Recycling and composting opportunities have been developed and appear to be expanding. Minor modifications to the system may be needed to further encourage the recycling of materials from the waste stream. A description of the existing solid waste management system follows and is presented in detail in the following Sections of the Plan Update. Management components considered, but not incorporated into the selected alternative, are presented and discussed. The details of the non-selected components are provided in Appendix B.

The existing solid waste management system is the most practical, cost-effective, and environmentally sound alternative. System components were evaluated in previous planning documents and the evaluations and conclusions of those planning efforts remain valid. Therefore, no ranking of alternatives is required to implement the selected alternative.

Existing Solid Waste Management System

The existing solid waste management system consists of private collection of residential, commercial, and industrial waste through contracts with municipalities, commercial / industrial users, or directly with homeowners for residential pick-up. Waste is hauled directly to disposal facilities, except for the communities of Ray and Armada Townships, and the cities of Warren, Eastpointe, St. Clair Shores, Roseville, and Center Line where waste is brought to a transfer station and then hauled to the disposal facility. Refer to the page II 30 for a list of communities and haulers which serve the community.

Private refuse firms provide recycling for contract communities through both drop-off centers or by curb-side collection. Glass, paper, plastic, metal, batteries, white goods, and used motor oil are recycled. Yard waste and grass clipping are disposed at composting facilities.

Waste that is not recycled is disposed in licensed sanitary landfills in Macomb County and adjoining counties, or is incinerated at the Grosse Pointe-Clinton Refuse Disposal Authority incinerator.

Rule 711(d) of Part 115 requires alternative evaluation for the management components of waste reduction, pollution prevention, resource conservation, resource recovery,

volume reduction, sanitary landfill, collection process and transportation, ultimate disposal area uses, institutional arrangements, and recycling and composting programs. This evaluation follows:

Waste Reduction and Pollution Prevention This management strategy includes changes in manufacturing or other process which generate waste as a function of the process so that a reduced amount of waste is created. Additionally, changes may be made to a waste stream to produce a waste that contains less potential environmental problems. Waste reduction and pollution prevention are voluntary actions by industrial and commercial entities. Due to increased solid waste regulations and public awareness of environmental issues industries have been active in reducing the cost of disposal by reducing the amount of waste generated, and through such programs as the Clean Corporate Citizen program have become conscious of environmental issues. Waste reduction and pollution prevention is considered a part of the existing Macomb County solid waste management system and this plan encourages industries and commercial facilities to evaluate and implement these practices wherever possible.

Resource Conservation Resource conservation refers to the prevention or reduction of the quantity of waste generated. The primary methods for resource conservation include reducing the amount of materials in manufacturing products; developing and using products with lifetimes; producing products which are more repairable and durable; purchasing food and dry goods in bulk to reduce the amount of packaging waste; selecting products that are packaged in recyclable containers such as glass or aluminum; and purchasing reusable items instead of disposable products. The 1994 Macomb County Solid Waste Management Plan determined that there exists few, if any, state-, county-, or community-wide regulations which could be implemented to promote resource conservation. Resource conservation is considered a part of the existing Macomb County solid waste management system and this plan encourages industries and commercial facilities to evaluate and implement this practice wherever possible.

Resource Recovery This solid waste management strategy includes the separation of materials at the source and the subsequent recovery of materials, energy savings and/or production re-use potential, and market availability for recovered materials. Resource recovery is a part of the existing Macomb County solid waste management system. A detailed breakdown of resource recovery activities in presented in the following sections of this Plan Update.

Volume Reduction Waste processing by compactors, balers, shredders, and incinerators are means to reduce the volume of waste disposed. The Grosse Pointe-Clinton Refuse Disposal Authority provides the only volume reduction in the planning area. This facility is scheduled to close prior to April 1999, and there will be no active volume reduction facility in the planning area.

Sanitary Landfill Disposal of waste in sanitary landfills is a part of the existing Macomb

County solid waste management system. A detailed breakdown of sanitary landfilling activities is presented in the following sections of this Plan Update.

Collection Processes and Transportation Collection processes and transportation includes the process of transferring the waste from the point of generation to a transfer station, processing plant, resource recovery facility, or final disposal area. The existing Macomb County solid waste management system includes collection processes and transportation.

Ultimate Disposal Area Uses This includes recreational or other potential uses after a facility is properly closed and maintained. The existing Macomb County solid waste management system includes this strategy to the extent that the Pine Tree Acres Landfill has indicated its final use on the application for license renewal. Pine Tree Acres Landfill has indicated that a specific plan for reuse has not been determined and has indicated that one possible use of the closed facility would be a recreational facility.

Institutional Arrangements This includes the agreements and organizational arrangements and structures which provide for public and/or private operation of solid waste collection, processing, and disposal systems. The following sections of this Plan Update describe the institutional arrangements for the implementation of the Macomb County Solid Waste Plan Update.

Recycling and Composting Programs Recycling and composting programs are a part of the Macomb County solid waste management system, and will be described in detail in the following sections of this Plan Update.

Alternative Solid Waste Management Systems
Numerous solid waste management system components were evaluated in the 1982 and 1994 Macomb County Solid Waste Management Plans. These included balefilling, shredding, pyrolsis, hydrolysis, and refuse derived fuel, among others. These previous studies have shown that these system components are not feasible at this time for Macomb County. One alternative management system that is considered further is discussed below.

Refuse collection would continue to be provided by private refuse haulers under contract with municipalities or individual homeowners. The private sector provides recycling through drop-off center and curbside collection and composting facilities and this would continue in the alternative.

Waste that is not recycled would be directed to a waste-to-energy (WTE) facility that would be owned and operated by either Macomb County or a County-wide Refuse Disposal Authority established by the Macomb County municipalities. Refuse would be incinerated to reduce its volume and the ash would be disposed in a sanitary landfill. Heat produced during the incineration process would be used in dedicated boilers to generate electricity

that would be sold to Detroit Edison. This alternative would reduce the amount of waste entering landfills extending the operating life of the landfill. Energy would be recovered in this alternative where it would not be available with sanitary landfilling.

Waste to energy was evaluated in detail by Macomb County in the Phase I and Phase II "Waste to Energy Feasibility Study for Macomb County". It was determined that waste to energy was not viable since energy markets and waste commitments were not available. These conditions still exist in Macomb County and therefore, this alternative is not feasible. Discussion of this non-select alternative is found in Appendix B.

THE SELECTED SOLID WASTE MANAGEMENT SYSTEM

The Selected Solid Waste Management System (Selected System) is a comprehensive approach to managing the County's solid waste and recoverable materials. The Selected System addresses the generation, transfer and disposal of the County's solid waste. It aims to reduce the amount of solid waste sent for final disposal by volume reduction techniques and by various resource conservation and resource recovery programs. It also addresses collection processes and transportation needs that provide the most cost effective, efficient service. Proposed disposal areas locations and capacity to accept solid waste are identified as well as program management, funding, and enforcement roles for local agencies. Detailed information on recycling programs, evaluation, and coordination of the Selected System is included in Appendix B. Following is an overall description of the Selected System:

Selected Solid Waste Management System

The selected solid waste management system consists of private and municipal collection of residential, commercial, and industrial waste through contracts with municipalities, commercial/industrial users, or directly with homeowners for residential pick-up. Waste is hauled directly to disposal facilities, except for the communities of Ray, and Armada Townships, and the cities of Warren, Eastpointe, St. Clair Shores, Roseville, and Center Line where waste is brought to a transfer station and then hauled to the disposal facility.

Private refuse firms provide recycling for contract communities, through both drop-off centers, or by curb-side collection. Glass, paper, plastic, metal, batteries, white goods, and used motor oil are recycled. Yard waste and grass clipping are disposed at composting facilities.

Waste that is not recycled is disposed in licensed sanitary landfills in Macomb County and other counties, or is incinerated at the Grosse Pointe-Clinton Refuse Disposal Authority incinerator. Macomb County has sufficient landfill space to meet its needs for the five year and ten year planning periods.

A detailed description of elements of the solid waste management plan follows.

SELECTED SYSTEM

IMPORT AUTHORIZATION

If a Licensed solid waste disposal area is currently operating within the County, disposal of solid waste generated by the EXPORTING COUNTY is authorized by the IMPORTING COUNTY up to the AUTHORIZED QUANTITY according to the CONDITIONS AUTHORIZED in Table 1-A.

Table 1-A

CURRENT IMPORT VOLUME AUTHORIZATION OF SOLID WASTE

IMPORTING COUNTY	EXPORTING COUNTY	FACILITY NAME[1]	AUTHORIZED QUANTITY/ DAILY	AUTHORIZED QUANTITY/ ANNUAL	AUTHORIZED CONDITIONS[2]
Macomb County	Wayne County	GrossePointe-Clinton Refuse Disposal Authority Waste Reduction Plant	_____	60,000 Tons	*
Macomb County	Wayne County	Pine Tree Acres Landfill	_____	900,000 CY	*
Macomb County	Oakland County	Pine Tree Acres Landfill	_____	500,000 CY	*
Macomb County	St. Clair County	Pine Tree Acres Landfill	_____	350,000 CY	*
Macomb County	Lapeer County	Pine Tree Acres Landfill	_____	100,000 CY	*
Macomb County	Monroe County	Pine Tree Acres Landfill	_____	15,000 CY	*
Macomb County	Washtenaw County	Pine Tree Acres Landfill	_____	1,500,000 CY	

[1] Facilities are only listed if the exporting county is restricted to using specific facilities within the importing county.

[2] Authorization indicated by P = Primary Disposal; C = Contingency Disposal; * = Other conditions exist and detailed explanation is included in the Attachment Section.

Table 1-A Cont'd

CURRENT IMPORT VOLUME AUTHORIZATION OF SOLID WASTE

IMPORTING COUNTY	EXPORTING COUNTY	FACILITY NAME[1]	AUTHORIZED QUANTITY/ DAILY	AUTHORIZED QUANTITY/ ANNUAL	AUTHORIZED CONDITIONS[2]
Macomb County	Genesse County	Pine Tree Acres Landfill		15,000 CY	*
Macomb County	Livingston County	Pine Tree Acres Landfill		15,000 CY	*
Macomb County	Tuscola County	Pine Tree Acres Landfill		15,000 CY	*
Macomb County	Sanilac County	Pine Tree Acres Landfill		80,000 CY	*
Macomb County	Huron County	Pine Tree Acres Landfill		15,000 CY	*
Macomb County	Saginaw County	Pine Tree Acres Landfill		9,000 CY	*
Macomb County	Shiawasee County	Pine Tree Acres Landfill		6,000 CY	*
Macomb County	Oakland County	SMDA Transfer Station		150,000 CY	*
Macomb County	St. Clair County	SMDA Transfer Station		50,000 CY	*
Macomb County	Wayne County	SMDA Transfer Station		150,000 CY	*

[1] Facilities are only listed if the exporting county is restricted to using specific facilities within the importing county.

[2] Authorization indicated by P = Primary Disposal; C = Contingency Disposal; * = Other conditions exist and detailed explanation is included in the Attachment Section.

3 The counties and the corresponding volumes of waste that are identified in Table I-A, are to be used to satisfy landfill quantity reporting to the State of Michigan for respective planning periods. Throughout the current, and upcoming, planning periods, the respective counties are approved to utilize the Pine Tree Acres facilities (PTA), providing PTA has sufficient capacity to service all Macomb County Communities for the next 10 years. The capacity of PTA will be re-evaluated during the next plan update. In addition, the county who intends to export waste to Macomb County, will have adopted a Solid Waste Management Plan which incorporates similar Goals and Objectives as the Macomb County Solid Waste Management Plan.

SELECTED SYSTEM

If a new solid waste disposal area is constructed and operating in the future in the County, then disposal of solid waste generated by the EXPORTING COUNTY is If authorized by the IMPORTING COUNTY up to the AUTHORIZED QUANTITY according to the AUTHORIZED CONDITIONS in Table 1-B.

Table 1-B

FUTURE IMPORT VOLUME AUTHORIZATION OF SOLID WASTE CONTINGENT ON NEW FACILITIES BEING SITED

IMPORTING COUNTY	EXPORTING COUNTY	FACILITY NAME[1]	AUTHORIZED QUANTITY/ DAILY	AUTHORIZED QUANTITY/ ANNUAL	AUTHORIZED CONDITIONS[2]
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

☐ Additional authorizations and the above information for those authorizations are listed on an attached page.

[1] Facilities are only listed if the exporting county is restricted to using specific facilities within the importing county.

[2] Authorization indicated by P = Primary Disposal; C = Contingency Disposal; * = Other conditions exist and detailed explanation is included in the Attachment Section.

EXPORT AUTHORIZATION

If a Licensed solid waste disposal area is currently operating within another County, disposal of solid waste generated by the EXPORTING COUNTY is authorized up to the AUTHORIZED QUANTITY according to the CONDITIONS AUTHORIZED in Table 2-A if authorized for import in the approved Solid Waste Management Plan of the receiving County.

Table 2-A

CURRENT EXPORT VOLUME AUTHORIZATION OF SOLID WASTE

EXPORTING COUNTY	IMPORTING COUNTY	FACILITY NAME[1]	AUTHORIZED QUANTITY/ DAILY	AUTHORIZED QUANTITY/ ANNUAL	AUTHORIZED CONDITIONS[2]
Macomb	Washtenaw			1,500,000 CY	P
Macomb	Sanilac		950 CY	247,000 CY	P
Macomb	Oakland			430,000 CY	P
Macomb	Wayne			135,000 CY	P
Macomb	Jackson			10,000 CY	P
Macomb	Lenawee		1000 T	743,000 CY	P
Macomb	Shiawassee			10,000 CY	P
Macomb	Monroe			500,000 CY	P

---Additional authorizations and the above information for those authorizations are listed on an attached page.

If a new solid waste disposal area is constructed and operates in the future in another County, then disposal of solid waste generated by the EXPORTING COUNTY is authorized up to the AUTHORIZED QUANTITY according to the AUTHORIZED CONDITIONS in Table 2-B if authorized for import in the approved Solid Waste Management Plan of the receiving County.

Table 2-B

FUTURE EXPORT VOLUME AUTHORIZATION OF SOLID WASTE CONTINGENT ON NEW FACILITIES BEING SITED

EXPORTING COUNTY	IMPORTING COUNTY	FACILITY NAME[1]	AUTHORIZED QUANTITY/ DAILY	AUTHORIZED QUANTITY/ ANNUAL	AUTHORIZED CONDITIONS[2]
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

☐ Additional authorizations and the above information for those authorizations are listed on an attached page.

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[1] Facilities are only listed if the exporting county is restricted to using specific facilities within the importing county.

[2] Authorization indicted by P= Primary Disposal; C= Contingency Disposal; *= Other conditions exist and detailed explanation is included in the Attachment Section.

SELECTED SYSTEM
SOLID WASTE DISPOSAL AREAS

The following identifies the names of existing disposal areas which will be utilized to provide the required capacity and management needs for the solid waste generated within the County for the next five years and, if possible, the next ten years. Pages III-8 through III-23 contain descriptions of the solid waste disposal facilities which are located within the County and the disposal facilities located outside of the County which will be utilized by the County for the planning period. Additional facilities within the County with applicable permits and licenses may be utilized as they are sited by this Plan, or amended into this Plan, and become available for disposal. If this Plan update is amended to identify additional facilities in other counties outside the County, those facilities may only be used if such import is authorized in the receiving County's Plan. Facilities outside of Michigan may also be used if legally available for such use.

Macomb County received requests from waste disposal firms to include all of their landfills in the Solid Waste Management Plan. These landfills are located throughout the State of Michigan. The disposal facilities listed below have historically received waste from the Macomb County planning area or are accessible to the communities within a reasonable traveling distance. Only these disposal facilities are included in the Solid Waste Management Plan to minimize the need to include import and export authorization in County Solid Waste Plan when there is no likelihood that waste would be disposed at a distant disposal facility.

Type II Landfill:
Pine Tree Acres Landfill

Arbor Hills

Tri-City RDF

Oakland Heights Development

Eagle Valley RDF

Sauk Trail Hills Development

Woodland Meadows Landfill

Carleton Farms Landfill

Adrian Landfill

Venice Park RDF

Type III Landfill:
Liberty Environmentalist
Rockwood Landfill

Type A Transfer Facility:
SMDA

Warren

Type B Transfer Facility:
Ray Township

Armada Township

Processing Plant:

SELECTED SYSTEM

Incinerator:
Grosse Pointe-Clinton Refuse Disposal Authority

Waste Piles:

Waste-to-Energy Incinerator:

Other:

Additional facilities are listed on an attached page. Letters from or agreements with the listed disposal areas owners/operators stating their facility capacity and willingness to accept the County's solid waste are in the Attachments Section.

SELECTED SYSTEM

SOLID WASTE FACILITY DESCRIPTIONS

FACILITY DESCRIPTIONS

Facility Type: Transfer Station

Facility Name: South Macomb Disposal Authority (SMDA) Transfer Station

County: Macomb Location: Roseville Town: ____ Range: ____ Section(s): ____

Map identifying location included in Attachment Section: ☒ Yes ☐ No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: BFI Arbor Hills Landfill

☒ Public ☐ Private Owner: South Macomb Disposal Authority

Operating Status (check)		Waste Types Received (check all that apply)	
☒	open	☒	residential
☐	closed	☒	commercial
☒	licensed	☒	industrial (solid waste only, no special waste)
☐	unlicensed	☒	construction & demolition
☐	construction permit	☐	contaminated soils
☐	open, but closure pending	☐	special wastes *
		☐	other: ____

* Explanation of special wastes, including a specific list and/or conditions:

Site Size:

Total area of facility property:	10.729	acres
Total area sited for use:	10.729	acres
Total area permitted:	10.729	acres
Operating:	____	acres
Not excavated:	____	acres
Current capacity:	555	☒ tons per day or ☐ yds^3
Estimated lifetime:	N/A	years
Estimated days open per year:	256	days
Estimated yearly disposal volume:	120,000	☒ tons or ☐ yds^3

(if applicable)
Annual energy production:

Landfill gas recovery projects:	N/A	megawatts
Waste-to-energy incinerators:	N/A	megawatts

SELECTED SYSTEM

FACILITY DESCRIPTIONS

Facility Type: Landfill

Facility Name: Arbor Hills

County: Washtenaw Location: Salem Twp. Town:____Range: _____Section(s):13

Map identifying location included in Attachment Section: ☒ Yes ☐ No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: N/A

☐ Public ☒ Private Owner: BFI

Operating Status (check)		Waste Types Received (check all that apply)	
☒	open	☒	residential
☐	closed	☒	commercial
☒	licensed	☒	industrial
☐	unlicensed	☒	construction & demolition
☒	construction permit	☒	contaminated soils
☐	open, but closure pending	☒	special wastes *
		☒	other: Arbor Hills is also home to a recycling center and compost facility.

* Explanation of special wastes, including a specific list and/or conditions:
Non-hazardous (by Fed, State, & local regs.) Industrial process waste (i.e, sludges, filter cakes) and asbestos.

Site Size:

Total area of facility property:	936	acres
Total area sited for use:	356	acres
Total area permitted:	217	acres
Operating:	113	acres
Not excavated:	104	acres
Current capacity:	30,500,000	☐tons or ☒yds^3
Estimated lifetime:	17.6	years
Estimated days open per year:	265	days
Estimated yearly disposal volume:	3,500,000	☐tons or ☒yds^3

(if applicable)
Annual energy production:

Landfill gas recovery projects:	18	megawatts
Waste-to-energy incinerators:	N/A	megawatts

SELECTED SYSTEM

FACILITY DESCRIPTIONS

Facility Type: Landfill

Facility Name: Venice Park RDF

County: Shiawassee Location: Venice Twp. Town:_____ Range: R4E Section(s): 27

Map identifying location included in Attachment Section: ☒ Yes ☐ No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: N/A

☐ Public ☒ Private Owner: Waste Management

Operating Status (check)		Waste Types Received (check all that apply)	
☒	open	☒	residential
☐	closed	☒	commercial
☒	licensed	☒	industrial
☐	unlicensed	☒	construction & demolition
☒	construction permit	☒	contaminated soils
☐	open, but closure pending	☒	special wastes *
		☒	other: Solidification

* Explanation of special wastes, including a specific list and/or conditions:
Asbestos, Medical Waste; Venice Park RDF is also licensed to solidify non-hazardous liquids on site.

Site Size:

Total area of facility property:	80	acres
Total area sited for use:	67	acres
Total area permitted:	67	acres
Operating:	42	acres
Not excavated:	2.5	acres - closed -22.5 acres
Current capacity:	2,200,000	☐tons or ☒ yds^3
Future capacity:	13,000,000	
Estimated lifetime:	2	years- future expansion 25 years
Estimated days open per year:	281	days
Estimated yearly disposal volume:	1,222,109	☐ tons or ☒ yds^3

(if applicable)
Annual energy production:

Landfill gas recovery projects:	11,500	megawatts
Waste-to-energy incinerators:	N/A	megawatts

SELECTED SYSTEM

FACILITY DESCRIPTIONS

Facility Type: Landfill

Facility Name: Liberty Environmentalist

County: Jackson Location: Liberty Twp. Town:____ Range: ____Section(s): 1

Map identifying location included in Attachment Section: ☒ Yes ☐ No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: N/A

☐ Public ☒Private Owner: Liberty Environmentalist

Operating Status (check)		Waste Types Received (check all that apply)	
☒	open	☐	residential
☐	closed	☐	commercial
☒	licensed	☒	industrial
☐	unlicensed	☒	construction & demolition
☐	construction permit	☐	contaminated soils
☐	open, but closure pending	☒	special wastes *
		☐	other: _____

* Explanation of special wastes, including a specific list and/or conditions:
Shredder fluff & foundry sand.

Site Size:

Total area of facility property:	222	acres
Total area sited for use:	65	acres
Total area permitted:	25	acres
Operating:	7.5	acres
Not excavated:	40	acres
Current capacity:	400,000	☐ tons or ☒ yds^3
Estimated lifetime:	20	years
Estimated days open per year:	300	days
Estimated yearly disposal volume:	155,000	☐ tons or ☒ yds^3

(if applicable)
Annual energy production:

Landfill gas recovery projects:	N/A	megawatts
Waste-to-energy incinerators:	N/A	megawatts

SELECTED SYSTEM

FACILITY DESCRIPTIONS

Facility Type: Landfill

Facility Name: Sauk Trail Hills Development

County: Wayne Location: Canton Twp. Town:____ Range: ____Section(s): 35

Map identifying location included in Attachment Section: ☒ Yes ☐ No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: N/A

☐ Public ☒Private Owner: Allied

Operating Status (check)		Waste Types Received (check all that apply)	
☒	open	☒	residential
☐	closed	☒	commercial
☒	licensed	☒	industrial
☐	unlicensed	☒	construction & demolition
☐	construction permit	☒	contaminated soils
☐	open, but closure pending	☒	special wastes *
		☐	other: _____

* Explanation of special wastes, including a specific list and/or conditions:
Non-hazardous material.

Site Size:

Total area of facility property:	200.7	acres
Total area sited for use:	160.2	acres
Total area permitted:	50.7	acres
Operating:	50.7	acres
Not excavated:	90.7	acres
Current capacity:	18,000,000	☐ tons or ☒ yds^3
Estimated lifetime:	12.5	years
Estimated days open per year:	309	days
Estimated yearly disposal volume:	1,440,000	☐ tons or ☒ yds^3

(if applicable)
Annual energy production:

Landfill gas recovery projects:	N/A	megawatts
Waste-to-energy incinerators:	N/A	megawatts

SELECTED SYSTEM

FACILITY DESCRIPTIONS

Facility Type: Landfill

Facility Name: Oakland Heights Development

County: Oakland Location: Auburn Town:____ Range: ____Section(s): 2

Map identifying location included in Attachment Section: ☒ Yes ☐ No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: N/A

☐ Public ☒ Private Owner: Allied

Operating Status (check)		Waste Types Received (check all that apply)	
☒	open	☒	residential
☐	closed	☒	commercial
☒	licensed	☒	industrial
☐	unlicensed	☒	construction & demolition
☐	*construction permit*	☒	contaminated soils
☐	open, but closure pending	☒	special wastes *
		☐	other: _____

* Explanation of special wastes, including a specific list and/or conditions:
Any non-hazardous material

Site Size:

Total area of facility property:	179.74	acres
Total area sited for use:		acres
Total area permitted:	63.87	acres
Operating:	63.87	acres
Not excavated:	22.1	acres
Current capacity:	3,500,000	☐ tons or ☒ yds^3
Estimated lifetime:	4	years
Estimated days open per year:	309	days
Estimated yearly disposal volume:	500,000	☐ tons or ☒ yds^3

(if applicable)
Annual energy production:

Landfill gas recovery projects:	N/A	megawatts
Waste-to-energy incinerators:	N/A	megawatts

SELECTED SYSTEM

FACILITY DESCRIPTIONS

Facility Type: Landfill

Facility Name: Tri-City RDF

County: Sanilac Location: Town: 12N Range: 15E Section(s): 32

Map identifying location included in Attachment Section: ☒ Yes ☐ No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: N/A

☐ Public ☒ Private Owner: Waste Management

Operating Status (check)		Waste Types Received (check all that apply)	
☒	open	☒	residential
☐	closed	☒	commercial
☒	licensed	☒	industrial
☐	unlicensed	☒	construction & demolition
☒	construction permit	☒	contaminated soils
☐	open, but closure pending	☒	special wastes *
		☐	other: _____

* Explanation of special wastes, including a specific list and/or conditions:

Paper Pulp, shredded foam, food product waste.

Site Size:

Total area of facility property:	195.4	acres
Total area sited for use:	195.4	acres
Total area permitted:	125	acres
Operating:	31.6	acres
Not excavated:	93.4	acres
Current capacity:	10,780,000	☐ tons or ☒ yds^3
Estimated lifetime:	22	years
Estimated days open per year:	272	days
Estimated yearly disposal volume:	330,000	☐ tons or ☒ yds^3

(if applicable)
Annual energy production:

Landfill gas recovery projects:	N/A	megawatts
Waste-to-energy incinerators:	N/A	megawatts

SELECTED SYSTEM

FACILITY DESCRIPTIONS

Facility Type: Landfill

Facility Name: Woodland Meadows

County: Wayne Location: Town: 3S Range: 8E Section(s): 1

Map identifying location included in Attachment Section: ☒ Yes ☐ No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: N/A

☐ Public ☒ Private Owner: Waste Management

Operating Status (check)		Waste Types Received (check all that apply)	
☒	open	☒	residential
☐	closed	☒	commercial
☒	licensed	☒	industrial
☐	unlicensed	☒	construction & demolition
☒	construction permit	☒	contaminated soils
☐	open, but closure pending	☒	special wastes *
		☐	other: _____

* Explanation of special wastes, including a specific list and/or conditions:
Sludges - provided they are at least 30% solids

Site Size:

Total area of facility property:	214	acres
Total area sited for use:	214	acres
Total area permitted:	148	acres
Operating:	70	acres
Not excavated:	78	acres
Current capacity:	26,520,800	☐ tons or ☒ yds^3
Estimated lifetime:	19.8	years
Estimated days open per year:	305	days
Estimated yearly disposal volume:	1,340,200	☐ tons or ☒ yds^3

(if applicable)
Annual energy production:

Landfill gas recovery projects:	400,00	MMBTU
Waste-to-energy incinerators:	N/A	megawatts

SELECTED SYSTEM

FACILITY DESCRIPTIONS

Facility Type: Landfill

Facility Name: Carleton Farms

County: Wayne Location: Town:____ Range: ____Section(s): 36

Map identifying location included in Attachment Section: ☒ Yes ☐ No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: N/A

☐ Public ☒ Private Owner: REPUBLIC

Operating Status (check)		Waste Types Received (check all that apply)	
☐	open	☐	residential
☐	closed	☐	commercial
☐	licensed	☐	industrial
☐	unlicensed	☐	construction & demolition
☐	construction permit	☐	contaminated soils
☐	open, but closure pending	☐	special wastes *
		☐	other: _____

* Explanation of special wastes, including a specific list and/or conditions:

Site Size:

Total area of facility property:	____	acres
Total area sited for use:	____	acres
Total area permitted:	____	acres
Operating:	____	acres
Not excavated:	____	acres
Current capacity:	____	☐ tons or ☐ yds^3
Estimated lifetime:	____	years
Estimated days open per year:	____	days
Estimated yearly disposal volume:	____	☐ tons or ☐ yds^3

(if applicable)
Annual energy production:

Landfill gas recovery projects:	____	megawatts
Waste-to-energy incinerators:	____	megawatts

SELECTED SYSTEM

FACILITY DESCRIPTIONS

Facility Type: Transfer Station

Facility Name: Ray Township Transfer Station

County: Macomb Location: Ray Twp. Town: 4N Range: 13E Section(s): 17

Map identifying location included in Attachment Section: ☒ Yes ☐ No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes:

☒ Public ☐ Private Owner: Ray Township

Operating Status (check)		Waste Types Received (check all that apply)	
☒	open	☒	residential
☐	closed	☐	commercial
☐	licensed	☐	industrial
☐	unlicensed	☐	construction & demolition
☐	construction permit	☐	contaminated soils
☐	open, but closure pending	☒	special wastes *
		☐	other: _____

* Explanation of special wastes, including a specific list and/or conditions:
Used motor oil picked up by Safety-Kleen

Site Size:

Total area of facility property:	9.08	acres
Total area sited for use:	9.08	acres
Total area permitted:	9.08	acres
Operating:	2	acres
Not excavated:	0	acres
Current capacity:	_____	☐ tons or ☐ yds^3
Estimated lifetime:	_____	years
Estimated days open per year:	12	days
Estimated yearly disposal volume:	1,920	☐ tons or ☒ yds^3

(if applicable)
Annual energy production:

Landfill gas recovery projects:	N/A	megawatts
Waste-to-energy incinerators:	N/A	megawatts

SELECTED SYSTEM

FACILITY DESCRIPTIONS

Facility Type: Waste Reduction Plant

Facility Name: Grosse Pointe-Clinton Refuse Disposal Authority

County: Macomb Location: Clinton Twp. Town:____ Range: ____Section(s): _____

Map identifying location included in Attachment Section: ☒ Yes ☐ No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: Carleton Farms

☒ Public ☐ Private Owner: Grosse Pointe-Clinton Refuse Disposal Authority

Operating Status (check)		Waste Types Received (check all that apply)	
☒	open	☒	residential
☐	closed	☒	commercial
☒	licensed	☐	industrial
☐	unlicensed	☐	construction & demolition
☐	construction permit	☐	contaminated soils
☐	open, but closure pending	☐	special wastes *
		☐	other: _____

* Explanation of special wastes, including a specific list and/or conditions:

Site Size:

Total area of facility property:	67	acres
Total area sited for use:	5	acres
Total area permitted:	67	acres
Operating:		acres
Not excavated:		acres
Current capacity:	600 TPD	☐ tons or ☐ yds^3
Estimated lifetime:		years
Estimated days open per year:	275	days
Estimated yearly disposal volume:	125,600	☒ tons or ☐ yds^3

(if applicable)
Annual energy production:

Landfill gas recovery projects:	N/A	megawatts
Waste-to-energy incinerators:	N/A	megawatts

SELECTED SYSTEM

FACILITY DESCRIPTIONS

Facility Type: Landfill

Facility Name: Pine Tree Acres

County:_____ Location: Lenox Twp. Town:4N Range: 14E Section(s): 23,24

Map identifying location included in Attachment Section: ☒ Yes ☐ No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: N/A

☐ Public ☒Private Owner: Waste Management

Operating Status (check)		Waste Types Received (check all that apply)	
☒	open	☒	residential
☐	closed	☒	commercial
☒	licensed	☒	industrial
☐	unlicensed	☒	construction & demolition
☐	construction permit	☒	contaminated soils
☐	open, but closure pending	☒	special wastes *
		☐	other: _____

* Explanation of special wastes, including a specific list and/or conditions:

Sludge, Auto Fluff

Site Size:

Total area of facility property:	568	acres
Total area sited for use:	568	acres
Total area permitted:	161.2	acres
Operating:	86.1	acres
Not excavated:	75.1	acres
Current capacity:	7,200,000	☐ tons or ☒ yds^3 (Remaining Future Capacity 59,000,000 yd^3)
Estimated lifetime:	8	years (Future expansion 27 years)
Estimated days open per year:	286	days
Estimated yearly disposal volume:	1,800,000	☐ tons or ☒ yds^3

(if applicable)
Annual energy production:

Landfill gas recovery projects:	4	megawatts
Waste-to-energy incinerators:	N/A	megawatts

SELECTED SYSTEM

FACILITY DESCRIPTIONS

Facility Type: Landfill

Facility Name: Eagle Valley RDF

County: Oakland Location: Town: 4N Range: 10E Section(s): 26, 27

Map identifying location included in Attachment Section: ☒ Yes ☐ No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: N/A

Public ☒ Private Owner: Waste Management

Operating Status (check)		Waste Types Received (check all that apply)	
☒	open	☒	residential
☐	closed	☒	commercial
☒	licensed	☒	industrial
☐	unlicensed	☒	construction & demolition
☒	construction permit	☒	contaminated soils
☐	open, but closure pending	☒	special wastes *
		☒	other: _____

* Explanation of special wastes, including a specific list and/or conditions:

Contaminated soils, chemical containing equipment, coal ash, filter cake, contaminated residuals, incinerator ash, industrial process waste, non-friable asbestos, treated medical wastes, treatment plant sludge, paint filters.

Site Size:

Total area of facility property:	330	acres
Total area sited for use:	330	acres
Total area permitted:	89	acres
Operating:	76	acres
Not excavated:	13	acres
Current capacity:	4,700,000	☐ tons or ☒ yds^3
Estimated lifetime:	5.9	years
Estimated days open per year:	286	days
Estimated yearly disposal volume:	1,650,000	☐ tons or ☒ yds^3

(if applicable)
Annual energy production:

Landfill gas recovery projects:	N/A	megawatts
Waste-to-energy incinerators:	N/A	megawatts

SELECTED SYSTEM

FACILITY DESCRIPTIONS

Facility Type: Transfer Station

Facility Name: Warren Transfer Station

County: Macomb Location: Town:_____ Range: _____Section(s): _____

Map identifying location included in Attachment Section: ☒ Yes ☐ No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: Pine Tree Acres Landfill

☒ Public ☐ Private Owner: City of Warren

Operating Status (check)		Waste Types Received (check all that apply)	
☒	open	☒	residential
☐	closed	☒	commercial
☐	licensed	☐	industrial
☐	unlicensed	☐	construction & demolition
☐	construction permit	☐	contaminated soils
☐	open, but closure pending	☐	special wastes *
		☐	other: _____

* Explanation of special wastes, including a specific list and/or conditions:

Site Size:

Total area of facility property:	_____	acres
Total area sited for use:	_____	acres
Total area permitted:	_____	acres
Operating:	_____	acres
Not excavated:	_____	acres
Current capacity:	_____	☐ tons or ☐ yds^3
Estimated lifetime:	_____	years
Estimated days open per year:	_____	days
Estimated yearly disposal volume:	45,500	☒ tons or ☐ yds^3 From Macomb County

(if applicable)
Annual energy production:

Landfill gas recovery projects:	N/A	megawatts
Waste-to-energy incinerators:	N/A	megawatts

SELECTED SYSTEM

FACILITY DESCRIPTIONS

Facility Type: Transfer Station

Facility Name: Armada Township Transfer Station

County: Macomb Location: Town:_____ Range: _____Section(s): _____

Map identifying location included in Attachment Section: ☒ Yes ☐ No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: N/A

☒ Public ☐ Private Owner: Armada Township

Operating Status (check)		Waste Types Received (check all that apply)	
☒	open	☐	residential
☐	closed	☐	commercial
☐	licensed	☐	industrial
☐	unlicensed	☐	construction & demolition
☐	construction permit	☐	contaminated soils
☐	open, but closure pending	☐	special wastes *
		☐	other: _____

* Explanation of special wastes, including a specific list and/or conditions:

Site Size:

Total area of facility property:	_____	acres
Total area sited for use:	_____	acres
Total area permitted:	_____	acres
Operating:	_____	acres
Not excavated:	_____	acres
Current capacity:	_____	☐ tons or ☐ yds^3
Estimated lifetime:	_____	years
Estimated days open per year:	_____	days
Estimated yearly disposal volume:	_____	☐ tons or ☐ yds^3

(if applicable)
Annual energy production:

Landfill gas recovery projects:	N/A	megawatts
Waste-to-energy incinerators:	N/A	megawatts

SELECTED SYSTEM

FACILITY DESCRIPTIONS

Facility Type: Landfill

Facility Name: Adrian Landfill

County: Lenawee Location: Palmyra Town:_____ Range: _____Section(s): 6, 7

Map identifying location included in Attachment Section: ☒ Yes ☐ No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: N/A

☐ Public ☒ Private Owner: ALLIED

Operating Status (check)		Waste Types Received (check all that apply)	
☒	open	☒	residential
☐	closed	☒	commercial
☒	licensed	☒	industrial
☐	unlicensed	☒	construction & demolition
☐	construction permit	☒	contaminated soils
☐	open, but closure pending	☒	special wastes *
		☐	other: _____

* Explanation of special wastes, including a specific list and/or conditions:

Asbestos, sludge: per environmental guidelines.

Site Size:

Total area of facility property:	421	acres
Total area sited for use:	287	acres
Total area permitted:	39.94	acres
Operating:	19.49	acres
Not excavated:	20.45	acres
Current capacity:	2,002,000	☐ tons or ☒ yds^3
Estimated lifetime:	6.83	years
Estimated days open per year:	307	days
Estimated yearly disposal volume:	97,731	☐ tons or ☒ yds^3

(if applicable)
Annual energy production:

Landfill gas recovery projects:	N/A	megawatts
Waste-to-energy incinerators:	N/A	megawatts

SELECTED SYSTEM

FACILITY DESCRIPTIONS

Facility Type: Landfill (Type III)

Facility Name: Standard Environmental Services - Rockwood Landfill

County: Monroe Location: Berlin Twp. Town:_____ Range: _____Section(s): 6, 7

Map identifying location included in Attachment Section: ☒ Yes ☐ No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: N/A

☐ Public ☒ Private Owner: Standard Disposal

Operating Status (check)		Waste Types Received (check all that apply)	
☒	open	☒	residential
☐	closed	☒	commercial
☒	licensed	☒	industrial
☐	unlicensed	☒	construction & demolition
☐	construction permit	☒	contaminated soils
☐	open, but closure pending	☒	special wastes *
		☐	other: _____

* Explanation of special wastes, including a specific list and/or conditions:

Low hazard industrial wastes and non-hazardous industrial wastes

Site Size:

Total area of facility property:	209.46	acres
Total area sited for use:	147.74	acres
Total area permitted:	209.46	acres
Operating:	10.92	acres
Not excavated:	136.82	acres
Current capacity:	21,765,000	☐ tons or ☒ yds^3
Estimated lifetime:	35	years
Estimated days open per year:	286	days
Estimated yearly disposal volume:	1,400,000	☐ tons or ☒ yds^3

(if applicable)
Annual energy production:

Landfill gas recovery projects:	N/A	megawatts
Waste-to-energy incinerators:	N/A	megawatts

SELECTED SYSTEM

SOLID WASTE COLLECTION SERVICES AND TRANSPORTATION:

The following describes the solid waste collection services and transportation infrastructure which will be utilized within the County to collect and transport solid waste.

Solid waste is collected by the private sector in Macomb County. Residential waste is collected by private haulers, either through contracts with municipalities or directly with private homeowners. There has been a consolidation of refuse collection firms and most residential waste is collected by one of several large waste hauling firms. BFI, Waste Management, and City Environmental account for the majority of the residential waste. Table 1 on page II-35 lists the haulers servicing each community in Macomb County. The same waste hauling companies also service industrial and commercial generated waste within Macomb County. Smaller commercial haulers service commercial and industrial users, or haul their own waste from roofing, demolition, and construction projects, or contract with builders or other contractors for the removal of these wastes.

Four transfer stations are in operation in the County: the Ray Township Transfer Station, Armada Township Transfer Station, SMDA Transfer Station, and City of Warren Transfer Station. These facilities will continue to collect solid waste for transfer to final disposal areas.

The transportation infrastructure in Macomb County is sufficient to accommodate the hauling and transfer vehicles used for the collection of solid waste. The major routes used for refuse hauling vehicles traveling north-south in the County are Van Dyke (M-53), Groesbeck (M-97), Mound, North Avenue, I-94, and Gratiot Avenue (M-3). Harper Avenue is used by vehicles traveling to and from the St. Clair Shores area and to the Grosse Pointe-Clinton Refuse Disposal Authority incinerator. East-west travel is accomplished by using several of the Mile Roads in the southern portion of the County. 29 Mile Road in the northern portion of the County, is used extensively by haulers transporting waste to the Pine Tree Acres Landfill. Other County Roads are also used, generally for short distances in traveling to and from the major routes to disposal areas.

SELECTED SYSTEM
RESOURCE CONSERVATION EFFORTS:

The following describes the selected system's proposed conservation efforts to reduce the amount of solid waste generated throughout the County. The annual amount of solid waste currently or proposed to be diverted from landfills and incinerators is estimated for each effort to be used, if possible. Since conservation efforts are provided voluntarily and change with technologies and public awareness, it is not this Plan update's intention to limit the efforts to only what is listed. Instead citizens, businesses, and industries are encouraged to explore the options available to their lifestyles, practices, and processes which will reduce the amount of materials requiring disposal.

The 1994 Macomb County Solid Waste Management Plan determined that few if any State-wide, County-wide, or community-wide regulations could be implemented to promote resource conservation. The 1994 Plan states that educating the public as to the methods of resource conservation can be used to effectively increase the number of persons and businesses participating in this form of waste management.

This Plan concurs that Macomb County cannot provide regulations that effectively promote resource conservation. Resource conservation is a waste management component best promoted on the State level. Therefore, this Plan encourages private industry and commercial entities to explore means to increase resource conservation and reduce the amount of waste generated. This Plan also encourages, but does not mandate, that the State of Michigan provide educational materials or seminars on resource conservation methods to interested parties. Educational materials could include news releases on purchasing reusable items rather than disposable, selecting products that are packaged in recyclable containers, such as glass or aluminum or purchasing food and dry goods in bulk to reduce the amount of packaging waste. Since conservation efforts are provided voluntarily and change with technologies and public awareness this plan cannot assign a value to the amount of waste diverted from landfills.

Macomb County encourages the reuse of materials through the purchase of products containing recycled materials. While the County does not have a written policy the County procedure is to consider products with recycled materials and purchase them if cost competitive.

Effort Description	Est. Diversion Tons/Yr		
	Current	5th yr.	10th yr.

☐ Additional efforts and the above information for those efforts are listed on an attached page.

SELECTED SYSTEM

WASTE REDUCTION, RECYCLING, & COMPOSTING PROGRAMS:

Volume Reduction Techniques

The following describes the techniques utilized and proposed to be used throughout the County which reduces the volume of solid waste requiring disposal. The annual amount of landfill air space not used as a result of each of these techniques is estimated. Since volume reduction is practiced voluntarily and because technologies change and equipment may need replacing, it is not this Plan update's intention to limit the techniques to only what is listed. Persons within the County are encouraged to utilize the technique that provides the most efficient and practical volume reduction for their needs. Documentation explaining achievements of implemented programs or expected results of proposed programs is attached.

The Grosse Pointe-Clinton Refuse Disposal Authority incinerator currently achieves approximately 93% volume reduction in the waste processed by the plant. The incinerator is scheduled to close within the next 12 months by April 1999, and consequently, no Macomb County waste will be subject to volume reduction after the incinerator is closed.

Technique Description	Est. Air Space Conserved Yds^3/Yr		
	Current	5th yr.	10th yr.
Incineration	90,000	0	0

☐ Additional efforts and the above information for those efforts are listed on an attached page.

SELECTED SYSTEM

Overview of Resource Recovery Programs:

: following describes the type and volume of material in the County's waste stream that may be available for recycling or composting programs. How conditions in the County affect or may affect a recycling or composting program and potential benefits derived from these programs is also discussed. Impediments to recycling or composting programs which exist or which may exist in the future are listed, followed by a discussion regarding reducing or eliminating such impediments.

A Solid Waste Stream Analysis was completed for Macomb County and identified the percentage of recyclables in the waste stream. The potential amounts of recyclables for the Macomb County planning area was determined using these data and the projected waste generation projections for residential and commercial waste. The projected annual amounts of recyclable materials are presented in the following table.

Category	% of Waste	Residential/Commercial Waste, tons	Amount, tons
Newsprint	10.4	594,332	62,000
Corrugated	11.4	594,332	68,000
Office Paper	1.0	594,332	6,000
Yard Waste	30.6	594,332	182,000
Glass	3.0	594,332	18,000
Ferrous Metal	4.4	594,332	26,000
Non-Ferrous	0.4	594,332	2,000

The amount of material recycled and composted in Macomb County is growing. The cooperation between private waste haulers and the individual communities minimizes impediments to the recycling and compost programs. Public awareness of the benefits of recycling waste to reduce the waste stream will create more competition among private waste haulers to provide better recycling facilities for the public. In addition, this competition will cause the private waste haulers and the communities to provide better education to the public about recycling, which will increase the county participation rate.

X Recycling programs within the County are feasible. Details of existing and planned programs are included on the following pages.

☐ Recycling programs for the County have been evaluated and it has been determined that it is not feasible to conduct any programs because of the following:

X Composting programs within the County are feasible. Details of existing and planned programs are included on the following pages.

☐ Composting programs for the County have been evaluated and it has been determined that it is not feasible to conduct any programs because of the following:

X Programs for source separation of potentially hazardous materials are feasible and details are included on the following pages.

☐ Separation of potentially hazardous materials from the County's waste stream has been evaluated and it has been determined that it is not feasible to conduct any separation programs because of the following:

RECYCLING AND COMPOSTING

The following is a brief analysis of the recycling and composting programs selected for the County in this Plan. Additional information on operation of recycling and composting programs is included in Appendix A. The analysis covers various factors within the County and the impacts of these factors on recycling and composting. Following the written analysis the tables on pages III-18, 19, & 20 list the existing recycling, composting, and source separation of hazardous materials programs that are currently active in the County and which will be continued as part of this Plan. The second group of three tables on pages III-21, 22, & 23 list the recycling, composting, and source separation of hazardous materials programs that are proposed in the future for the County. It is not this Plan update's intent to prohibit additional programs or expansions of current programs to be implemented beyond those listed.

Macomb County has experienced a significant increase in the number of communities that are actively involved in recycling programs since the 1994 Plan Update. Many communities within Macomb County plan, operate, and evaluate their recycling and composting programs with the assistance of private haulers. Sixteen communities within Macomb County indicated that they have a recycling program operating at the current time, while other communities noted that they were interested in information on how they could get materials collected for recycling include plastic containers, newspaper, corrugated containers, glass, metals, used oil, appliances, batteries, and Styrofoam. Grass clippings, leaves, and garden debris are collected for composting. Other than limitations provided by each private hauler, there are no ordinances or regulations affecting the operation of any of these programs.

Most communities have either drop-off sites where the residents sort their recyclables into large roll-off containers, or curb side pick-up. Some communities provide residents with a yard waste bin, or sticker to place on yard waste containers, and a smaller bin for recyclables, such as plastics and tin, to place on the curb for either weekly, bi-weekly, or daily pick up. The collection point and collection frequency for each participating community is presented in Table III-1.

The communities work with the private haulers to provide recycling for the residents of Macomb County. There is high public awareness that recycling will help the environment and reduce the waste stream being disposed in landfills. Because of this public awareness, waste haulers see the need to recycle to remain competitive with other haulers. These cooperative agreements between the communities within Macomb County and the waste haulers ensure that waste will be recycled.

The successful recycling programs have a significant amount of community participation. Information regarding the recycling programs was provided by the private waste haulers and the communities. Flyers and newsletters are distributed detailing information on how to prepare the recyclables for pick up, what is accepted for recycling, and how recycling helps minimize the waste stream. Some communities offer short seminars that the public can attend to learn more about the basics of recycling. For example, St. Clair Shores has a traveling education booth that goes to community events and works with the local media. Their educational outreach program has resulted in an 80 percent recycling participation rate in the community. Other community participation rates average between 25 and 50 percent.

The current community participation that Macomb County has with its community recycling and composting programs indicates that Macomb County is moving towards the eight to 12

percent composting and the 20 to 30 percent recycling goal set by the State of Michigan by year 2005. Current estimates show that Macomb County is composting 8.5 percent of its residential waste, (5.2% of it's total waste) and recycling 5.9 percent of its total waste.

TABLE III-1

RECYCLING:

Program Name	Service Area[1]	Public or Private	Collection Point[3]	Collection Frequency[4]	Materials Collected[5]	Program Development	Management Operation	Responsibilities[2] Evaluation
Recycling	Armada Twp.	____	____	____	a,b,c,e,f	____	____	____
Recycling	City of Sterling Heights	____	____	____	a,b,c,e,f	____	____	____
Recycling	City of Fraser	____	____	____	a,b,e,f	____	____	____
Recycling	City of Mt. Clemens	____	____	____	a,b,c,d,e,f	____	____	____
Recycling	Romeo	____	____	____	a,b,e,f	____	____	____
Recycling	Richmond Twp.	____	____	____	a,b,c,e,f	____	____	____
Recycling	Clinton Twp.	____	____	____	a,b,e,f	____	____	____
Recycling	St. Clair Shores	____	____	____	a,b,c,d,e,f	____	____	5

[1] Identified by where the program will be offered. If throughout the planning are, then listed by planning area; if only in specific counties, then listed by county; if only in specific municipalities, then listed by its name and respective county.

[2] Identified by 1 = Designated Planning Agency; 2 = County Board of Commissioners; 3 = Department of Public Works; 4 = Environmental Group; 5 = Private Owner/Operator; 6 = Other.

[3] Identified by c = curb-side; d = drop-off; o = onsite; and if other, explained.

[4] Identified by d = daily; w = weekly; b = biweekly; m = monthly; and if seasonal service also indicated by Sp = Spring; Su = Summer; Fa = Fall; Wi = Winter.

[5] Identified by the material collected by listing of the letter located by that material type. A = Plastics; B = Newspaper; C = Corrugated Containers; D = Other Paper; E = Glass; F = Metals; P = Pallets; J = Construction/Demolition; K = Tires; L1, L2 etc.

Table I. CONT'D

RECYCLING:

Program Name	Service Area[1]	Public or Private	Collection Point[3]	Collection Frequency[4]	Materials Collected[5]	Program Development	Management Operation	Responsibilities[2] Evaluation
Recycling	Eastpointe				a,b,c,d,e,f			
Recycling	Center Line				a,b,c,d,e,f			
Recycling	City of Richmond				N/A			
Recycling	Ray Twp.				N/A			
Recycling	Warren				N/A			
Recycling	New Baltimore				N/A			
Recycling	Roseville				N/A			
Recycling	Shelby				a,b,c,f			

[1] Identified by where the program will be offered. If throughout the planning are, then listed by planning area; if only in specific counties, then listed by county; if only in specific municipalities, then listed by its name and respective county.

[2] Identified by 1 = Designated Planning Agency; 2 = County Board of Commissioners; 3 = Department of Public Works; 4 = Environmental Group; 5 = Private Owner/Operator; 6 = Other.

[3] Identified by c = curb-side; d = drop-off; o = onsite; and if other, explained.

[4] Identified by d = daily; w = weekly; b = biweekly; m = monthly; and if seasonal service also indicated by Sp = Spring; Su = Summer; Fa = Fall; Wi = Winter.

[5] Identified by the material collected by listing of the letter located by that material type. A = Plastics; B = Newspaper; C = Corrugated Containers; D = Other Paper; E = Glass; F = Metals; P = Pallets; J = Construction/Demolition; K = Tires; L1, L2 etc.

TABLE III-2

COMPOSTING:

Program Name	Service Area[1]	Public or Private	Collection Point[2]	Collection Frequency[3]	Materials Collected[4]	Program Development	Management Operation	Responsibilities[1] Evaluation
Indian Summer Recycling	City of Fraser	____	____	____	____	____	____	____
Indian Summer Recycling	Clinton Twp.	____	____	____	____	____	____	____
King of the Winds	Mt. Clemens	____	____	____	____	____	____	____
Pine Tree Acres	Sterling Heights	____	____	____	____	____	____	____
BFI (Northville)	Center Line	____	____	____	____	____	____	____
BFI (Northville)	St. Clair Shores	____	____	____	____	____	____	____
Waste Management	Romeo	____	____	____	____	____	____	____
City East	New Haven	____	____	____	____	____	____	____
Arbor Hills RRF	Eastpointe	____	____	____	____	____	____	____

Additional programs and the above information for those programs are listed on an attached page.

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[1] Identified by where the program will be offered. If throughout the planning are, then listed by planning area; if only in specific counties, then listed by county; if only in specific municipalities, then listed by its name and respective county.

[2] Identified by 1 = Designated Planning Agency; 2 = County Board of Commissioners; 3 = Department of Public Works; 4 = Environmental Group; 5 = Private Owner/Operator; 6 = Other.

[3] Identified by c = curb-side; d = drop-off; o = onsite; and if other, explained.

[4] Identified by d = daily; w = weekly; b = biweekly; m = monthly; and if seasonal service also indicated by Sp = Spring; Su = Summer; Fa = Fall; Wi = Winter.

[5] Identified by the material collected by listing of the letter located by that material type. G = Grass Clippings; L = Leaves; F = Food; W = Wood; P = Paper; S = Municipal Sewage Sludge; A = Animal Waste/Bedding; M = Municipal Solid Waste; L1, L2 etc.

TABLE CONT'D

COMPOSTING:

Program Name	Service Area[1]	Public or Private	Collection Point[6]	Collection Frequency[7]	Materials Collected[8]	Program Development	Management Operation	Responsibilities[5] Evaluation
	Roseville							
	Warren							
	Shelby Twp.	5	C	W	G,L	5	5	3

[1] Identified by where the program will be offered. If throughout the planning are, then listed by planning area; if only in specific counties, then listed by county; if only in specific municipalities, then listed by its name and respective county.

[2] Identified by 1 = Designated Planning Agency; 2 = County Board of Commissioners; 3 = Department of Public Works; 4 = Environmental Group; 5 = Private Owner/Operator; 6 = Other.

[3] Identified by c = curb-side; d = drop-off; o = onsite; and if other, explained.

[4] Identified by d = daily; w = weekly; b = biweekly; m = monthly; and if seasonal service also indicated by Sp = Spring; Su = Summer; Fa = Fall; Wi = Winter.

[5] Identified by the material collected by listing of the letter located by that material type. G = Grass Clippings; L = Leaves; F = Food; W = Wood; P = Paper; S = Municipal Sewage Sludge; A = Animal Waste/Bedding; M = Municipal Solid Waste; L1, L2 etc.

TABLE III-3

SOURCE SEPARATION OF POTENTIALLY HAZARDOUS MATERIALS:

Since improper disposal of nonregulated hazardous materials has the potential to create risks to the environment and human health, the following programs have been implemented to remove these materials from the County's solid waste stream.

Program Name	Service Area[1]	Public or Private	Collection Point[10]	Collection Frequency[11]	Materials Collected[12]	Program Development	Management Operation	Responsibilities[9] Evaluation
Macomb County Health Department	Macomb County	Public	d	varies	AR,B2,C, PS,PH,U, O,T, P	6	6	6
Waste Oil Recycling Sites	Mt. Clemens, Clinton Twp., Harrison Twp., Fraser, Sterling Heights, St. Clair Shores, Roseville, Eastpointe, Utica, Shelby Twp., Warren, Center Line	Public	d	varies	U	6	6	6
Household Battery/ US Postal Service	Macomb County	Public	d	d	B2	6	6	6

X Additional programs and the above information for those programs are listed on an attached page.

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[1] Identified by where the program will be offered. If throughout the planning area, then listed by planning area; if only in specific counties, then listed by county; if only in specific municipalities, then listed by its name and respective county.

[2] Identified by 1 -= Designated Planning Agency; 2 = County Board of Commissioners; 3 = Department of Public Works; 4 = Environmental Group; 5 = Private Owner/Operator; 6 = Other. Indicates Macomb County Health Department or U.S. Postal Service.

[3] Identified by c = curb-side; d = drop-off; o = onsite; and if other, explained.

[4] Identified by d = daily; w = weekly; b = biweekly; m = monthly; and if seasonal service also indicated by Sp = Spring; Su = Summer; Fa = Fall; Wi = Winter.

[5] Identified by the materials collected by listing of the letter located by that material type. AR = Aerosol Cans; A = Automotive Products except Used Oil, Oil Filters & Antifreeze; AN = Antifreeze; B1 = Lead Acid Batteries; B2 = Household Batteries; C = Cleaners and Polishers; H = Hobby and Art Supplies; OF = Used Oil Filters; P= Pains and Solvents; PS = Pesticides and Herbicides; PH = Personal and Health Care Products; U = Used Oil; OT = Other Materials and identified

Table III-3 CONT'D

Program Name	Service Area[1]	Public or Private	Collection Point[3]	Collection Frequency[4]	Materials Collected[5]	Program Development	Management Operation	Responsibilities[2] Evaluation
Household Hazardous Waste	Roseville	Public	d	varies	P,B2,C, U	3	3	3
Household Hazardous Waste	Shelby Twp.	Private	d	Sp	AR,C,P, PS,OT	5	5	3
Household Hazardous Waste	Eastpointe	Public	d	Su	B2,U	3	3	3
Household Hazardous Waste	St. Clair Shores	Private	d	Su	____	3	3	3

[1] Identified by where the program will be offered. If throughout the planning area, then listed by planning area; if only in specific counties, then listed by county; if only in specific municipalities, then listed by its name and respective county.

[2] Identified by 1 -= Designated Planning Agency; 2 = County Board of Commissioners; 3 = Department of Public Works; 4 = Environmental Group; 5 = Private Owner/Operator; 6 = Other. Indicates Macomb County Health Department or U.S. Postal Service.

[3] Identified by c = curb-side; d = drop-off; o = onsite; and if other, explained.

[4] Identified by d = daily; w = weekly; b = biweekly; m = monthly; and if seasonal service also indicated by Sp = Spring; Su = Summer; Fa = Fall; Wi = Winter.

[5] Identified by the materials collected by listing of the letter located by that material type. AR = Aerosol Cans; A = Automotive Products except Used Oil, Oil Filters & Antifreeze; AN = Antifreeze; B1 = Lead Acid Batteries; B2 = Household Batteries; C = Cleaners and Polishers; H = Hobby and Art Supplies; OF = Used Oil Filters; P= Pains and Solvents; PS = Pesticides and Herbicides; PH = Personal and Health Care Products; U = Used Oil; OT = Other Materials and identified

ADDITIONAL INFORMATION SOURCE SEPARATION OF POTENTIALLY HAZARDOUS MATERIALS

The Macomb County Health Department has established a household hazardous waste program that is available to all Macomb County households. Materials can be dropped off by appointment at a hazardous waste storage building located at the Health Department. The program is funded by the Macomb County Board of Commissioners through the Health Department budget. The program will accept Automotive Products (gasoline, motor oil, battery acid, solvents and degreasers, brake fluid, transmission fluid, and spray paint), Gardening Products (pesticides, weed killers, poisons, sprays and dust, and fertilizers), and Household Products (oven cleaners, muriatic acid, rat and ant poison, drain cleaner, pool chemicals, photo chemicals, household batteries, paint thinner and solvents, paint stripper, nail polish and remover, aerosols, and oil based paint).

The US Postal Service has partnered with the Macomb County Health Department to accept household batteries at local Post Offices throughout Macomb County.

The City of Roseville Department of Public Works receives oil based paint, batteries, oil and antifreeze, and cleaning supplies at the DPW facility. A household hazardous waste collection is provided to residents once each year.

The City of Eastpointe Department of Public Works has a drop off center for car and household batteries, antifreeze, and used oil. An annual collection day is staged in August by the DPW for household hazardous waste.

The City of St. Clair Shores stages an annual collection day for household hazardous waste through its DPW. The Second Annual event was held in June, 1998. The City provides a packet of information regarding solid waste procedures to all new residents.

A example of the information provided to citizens for the Macomb County Health Department, US Postal Service, and City of Roseville's household hazardous waste programs is attached in the Appendix.

TABLE III-4

PROPOSED RECYCLING:

Program Name (if known)	Service Area[1]	Public or Private	Collection Point[3]	Collection Frequency[4]	Materials Collected[5]	Program Development	Management Operation	Responsibilities[2] Evaluation
N/A								

☐ Additional programs and the above information for those programs are listed on an attached page.

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[1] Identified by where the program will be offered. If throughout the planning area, then listed by planning area; if only in specific counties, then listed by county; if only in specific municipalities, then listed by its name and respective county.

[2] Identified by 1 = Designated Planning Agency; 2 = County Board of Commissioners; 3 = Department of Public Works; 4 = Environmental Group; 5 = Private Owner/Operator; 6 = Other.

[3] Identified by c = curb-side; d = drop-off; o = onsite; and if other, explained.

[4] Identified by d = daily; w = weekly; b = biweekly; m = monthly; and if seasonal service also indicated by Sp = Spring; Su = Summer; Fa = Fall; Wi = Winter.

[5] Identified by the materials collected by listing of the letter located by that material type. A = Plastics; B = Newspaper; C = Corrugated Containers; D = Other Paper; E = Glass; F = Metals; P = Pallets; J = Construction/Demolition; K = Tires; L1, L2 etc.

TABLE III-5

PROPOSED COMPOSTING:

Program Name, (if known)	Service Area[1]	Public or Private	Collection Point[3]	Collection Frequency[4]	Materials Collected[5]	Program Development	Management Operation	Responsibilities[2] Evaluation
Compost Collection	Village of Armada is currently considering a program	____	____	____	____	____	____	____
		____	____	____	____	____	____	____
		____	____	____	____	____	____	____
		____	____	____	____	____	____	____
		____	____	____	____	____	____	____
		____	____	____	____	____	____	____
		____	____	____	____	____	____	____
		____	____	____	____	____	____	____

☐ Additional programs and the above information for those programs are listed on an attached page.

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[1] Identified by where the program will be offered. If throughout the planning area, then listed by planning area; if only in specific counties, then listed by county; if only in specific municipalities, then listed by its name and respective county.

[2] Identified by 1 = Designated Planning Agency; 2 = County Board of Commissioners; 3 = Department of Public Works; 4 = Environmental Group; 5 = Private Owner/Operator; 6 = Other.

[3] Identified by c = curb-side; d = drop-off; o = onsite; and if other, explained.

[4] Identified by d = daily; w = weekly; b = biweekly; m = monthly; and if seasonal service also indicated by Sp = Spring; Su = Summer; Fa = Fall; Wi = Winter.

[5] Identified by the materials collected by listing of the letter located by that material type. G = Grass Clippings; L = Leaves; F = Food; W = Wood; P = Paper; S = Municipal Sewage Sludge; A = Animal Waste/Bedding; M = Municipal Solid Waste; L1, L2 etc.

TABLE III-6

PROPOSED SOURCE SEPARATION OF POTENTIALLY HAZARDOUS MATERIALS:

Program Name, (if known)	Service Area[1]	Public or Private	Collection Point[3]	Collection Frequency[4]	Materials Collected[5]	Program Development	Management Operation	Responsibilities[2] Evaluation
		____	____	____	____	____	____	____
		____	____	____	____	____	____	____
		____	____	____	____	____	____	____

☐ Additional programs and the above information for those programs are listed on an attached page.

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[1] Identified by where the program will be offered. If throughout the planning area, then listed by planning area; if only in specific counties, then listed by county; if only in specific municipalities, then listed by its name and respective county.

[2] Identified by 1 = Designated Planning Agency; 2 = County Board of Commissioners; 3 = Department of Public Works; 4 = Environmental Group; 5 = Private Owner/Operator; 6 = Other.

[3] Identified by c = curb-side; d = drop-off; o = onsite; and if other, explained.

[4] Identified by d = daily; w = weekly; b = biweekly; m = monthly; and if seasonal service also indicated by Sp = Spring; Su = Summer; Fa = Fall; Wi = Winter.

[5] Identified by the materials collected by listing of the letter located by that material type. AR = Aerosol Cans; A = Automotive Products except Used Oil, Oil Filters & Antifreeze; AN = Antifreeze; B1 = Lead Acid Batteries; B2 = Household Batteries; C = Cleaners and Polishers; H = Hobby and Art Supplies; OF = Used Oil Filters; P = Paints and Solvents; PS = Pesticides and Herbicides; PH = Personal and Health Care Products; U = Used Oil; OT = Other Materials and identified.

SELECTED SYSTEM

IDENTIFICATION OF RESOURCE RECOVERY MANAGEMENT ENTITIES:

The following identifies those public and private parties, and the resource recovery or recycling programs for which they have management responsibilities.

Environmental Groups:

Other:

PROJECTED DIVERSION RATES:

The following estimates the annual amount of solid waste which is expected to be diverted from landfills and incinerators as a result of the current resource recovery programs and in five and ten years.

Current quantities of collected materials are calculated based on the data provided in the survey form each community provided. Currently, 59% of communities provide recycling for residents and 44% of communities provide composting for residents. The average public participation rate in recycling and composting programs was 45%. For projected recycling quantities, the 59% communities and 45% participation was increased to 80% communities and 50% participation for 5th year projected quantities and was increased to 100% communities and 60% participation for the 10th year projection. These percentages, population, and residential waste projections were used to calculate the projected annual tons diverted. The material recovery rates for non-composted material for industrial and commercial sources were assumed to be the same as residential quantities.

Collected Material:	Projected Annual Tons Diverted:			Collected Material:	Projected Annual Tons Diverted:		
	Current	5th Yr	10th Yr		Current	5th Yr	10th Yr
A. TOTAL PLASTICS:	2570	3680	6170	G. GRASS AND LEAVES:	37050	45600	77100
NEWSPAPER:	See(D)			H. TOTAL WOOD WASTE:	N/A		
C. CORRUGATED CONTAINERS:	17.7	25	35	I. CONSTRUCTION AND DEMOLITION:	N/A		
D. TOTAL OTHER PAPER:	15300	21800	36550	J. FOOD AND FOOD PROCESSING:	N/A		
E. TOTAL GLASS:	6110	8740	14660	K. TIRES:	N/A		
OTHER MATERIALS:				L. TOTAL METALS:	10490	15010	21160
F.1	2	2.5	3	F.3	7270	8949	13913
F.2	391	548	787	F.4			

N/A : No information available

SELECTED SYSTEM

MARKET AVAILABILITY FOR COLLECTED MATERIALS:

The following identifies how much volume that existing markets are able to utilize of the recovered materials which were diverted from the County's solid waste stream.

Collected Material:	In-State Markets	Out-of-State Markets	Collected Material	In-State Markets	Out-of-State Markets
A. TOTAL PLASTICS:	50		G. GRASS AND LEAVES:	100	
B. NEWSPAPER:	100		H. TOTAL WOOD WASTE:	100	
C. CORRUGATED CONTAINERS:	100		I. CONSTRUCTION AND DEMOLITION:	N/A	
D. TOTAL OTHER PAPER:	100		J. FOOD AND FOOD PROCESSING	N/A	
E. TOTAL GLASS:	50		K. TIRES:	N/A	
F. OTHER MATERIALS:			L. TOTAL METALS:		
F1.			F3.		

Majority of material can be sold to in-state markets, but many out-of-state markets are available.

EDUCATIONAL AND INFORMATIONAL PROGRAMS:

It is often necessary to provide educational and informational programs regarding the various components of a solid waste management system before and during its implementation. These programs are offered to avoid miscommunication which results in improper handling of solid waste and to provide assistance to the various entities who participate in such programs as waste reduction and waste recovery. Following is a listing of the programs offered or proposed to be offered in this County.

Program Topic[1]	Delivery Medium[2]	Targeted Audience[3]	Program Provider[4]
1,5	o,t,f	P	Sterling Heights
1	f	P	OO, Armada Twp.
1,2	f,t,website,o	P	Clinton Twp.
1	o,t	P	City of Fraser
1,2	f,t	P	EX, Mt. Clemens
1	o,f	P	City of Center Line
1	f	P	OO, Romeo
1	o, welcome signs	P	OO, City of Richmond

[1] Identified by 1 = recycling; 2 = composting; 3 = household hazardous waste; 4 = resource conservation; 5 = volume reduction; 6 = other which is explained.

[2] Identified by w = workshop; r = radio; t = television; n = newspaper; o = organizational newsletters; f = flyers: e = exhibits and locations listed; and ot = other which is explained.

[3] Identified by p = general public; b = business; i = industry; s = students with grade levels listed. In addition if the program is limited to a geographic area, then that county, city, village, etc. is listed.

[4] Identified by EX = MSU Extension; EG = Environmental Group (Identify name); OO = Private Owner/Operator (Identify name); HD = Health Department (Identify name); DPA = Designated Planning Agency; CU = College/University (Identify name); LS = Local School (Identify name); ISD = Intermediate School District (Identify name); O = Other which is explained.

Additional efforts and the above information for those efforts are listed in Appendix D.

Education and Informational Programs CONT'D

Program Topic[1]	Delivery Medium[2]	Targeted Audience[3]	Program Provider[4]
1,2	o,e,traveling booth	P	St. Clair Shores
1	o	P	Eastpointe

The Macomb Cooperative Extension Agency, part of the Michigan State University Cooperative Extension, has an education group that meets periodically (usually twice a year) to discuss recycling and composting issues and determine public information needs. The agency meeting includes representatives from environmental groups, the health department, department of public works, and the waste industry. The agency also conducts a master composting class each fall for municipal officials and residents.

TABLE III-7

TIMETABLE FOR SELECTED SYSTEM IMPLEMENTATION

This timetable is a guideline to implement components of the Selected System. The Timeline gives a range of time in which the component will be implemented such as "1995-1999" or "On-going". Timelines may be adjusted later, if necessary.

Management Components	Timeline
Collection	On-Going
Transport and Transfer Stations	On-Going
Volume Reduction	On-Going
Sanitary Landfill	On-Going
Recycling	On-Going
Composting	On-Going
Household Hazardous Waste	On-Going

SITING REVIEW PROCEDURES

AUTHORIZED DISPOSAL AREA TYPES

The following solid waste disposal area types may not be sited by this Plan. Any proposal to construct a facility listed herein shall be deemed inconsistent with this Plan.

Sanitary Landfill
Waste to Energy Facility
Transfer Station
Materials Recovery Facility

SITING CRITERIA AND PROCESS

The following process describes the criteria and procedures to be used to site solid waste disposal facilities and determine consistency with this Plan. (attach additional pages if necessary)

Macomb County has sufficient landfill capacity, utilizing the Pine Tree Acres landfill, for the five and ten year planning periods. Therefore, a siting criteria and process are not required.

SOLID WASTE MANAGEMENT COMPONENTS[1]

The following identifies the management responsibilities and institutional arrangements necessary for the implementation of the Selected Waste Management System. Also included is a description of the technical, administrative, financial and legal capabilities of each identified existing structure of persons, municipalities, counties and state and federal agencies responsible for solid waste management including planning, implementation, and enforcement.

The Macomb Board of Commissioners is the legislative, administrative and policy-making body of Macomb County government. Macomb County has a population currently estimated at 775,875, an annual budget over $209,000,000 with approximately 2300 employees. As such, the Macomb County Board of Commissioners is listed as the party for management responsibilities over the areas of the plan as described on the following pages.

All of the County departments, entities, persons and functions which relate to the various areas of the plan come under the aegis of the Macomb County Board of Commissioners in terms of purpose, mission, budgetary control and operational oversight.

This general position of the Macomb County Board of Commissioners is the basis for its identification as the primary responsible party for the plan.

[1] Components or subcomponents may be added to this table.

IDENTIFICATION OF RESPONSIBLE PARTIES

Document which entities within the County will have management responsibilities over the following areas of the Plan.

Resource Conservation:

Source or Waste Reduction - Board of Commissioners

Product Reuse - Board of Commissioners

Reduced Material Volume - Board of Commissioners

Increased Product Lifetime - Board of Commissioners

Decreased Consumption - Board of Commissioners

Resource Recovery Programs:

Composting - Board of Commissioners

Recycling - Board of Commissioners

Energy Production - Board of Commissioners

Volume Reduction Techniques: Board of Commissioners

Collection Processes: Board of Commissioners

ECTED SYSTEM
sportation: Board of Commissioners

Disposal Areas:

Processing Plants - Board of Commissioners

Incineration - Board of Commissioners

Transfer Stations - Board of Commissioners

Sanitary Landfills - Board of Commissioners

nate Disposal Area Uses: Board of Commissioners

Local Responsibility for Plan Update Monitoring & Enforcement: Board of Commissioners

Educational and Informational Programs: Board of Commissioners

Documentation of acceptance of responsibilities is contained in Appendix D.

LOCAL ORDINANCES AND REGULATIONS AFFECTING SOLID WASTE DISPOSAL

This Plan update's relationship to local ordinances and regulations within the County is described in the option(s) marked below:

_____ 1. Section 11538.(8) and rule 710 (3) of Part 115 prohibits enforcement of all County and local ordinances and regulations pertaining to solid waste disposal areas unless explicitly included in an approved Solid Waste Management Plan. Local regulations and ordinances intended to be part of this Plan must be specified below and the manner in which they will be applied described.

_____ 2. This Plan recognizes and incorporates as enforceable the following specific provisions based on existing zoning ordinances:

A. Geographic area/Unit of government: _____

Type of disposal area affected:

Ordinance or other legal basis: _____

Requirement/restriction:

B. Geographic area/Unit of government: _____

Type of disposal area affected: _____

Ordinance or other legal basis: _____

Requirement/restriction: _____

C. Geographic area/Unit of government: _____

Type of disposal area affected: _____

Ordinance or other legal basis: _____

Requirement/restriction:

D. Geographic area/Unit of government: _____

Type of disposal area affected: _____

Ordinance or other legal basis: _____

Requirement/restriction: _____

E. Geographic area/Unit of government: _____

Type of disposal area affected: _____

Ordinance or other legal basis: _____

Requirement/restriction: _____

_X___ 3. This Plan authorizes adoption and implementation of local regulations governing the following subjects by the indicated units of government without further authorization from or amendment to the Plan.

The City of St. Clair Shores ordinance Section 32.250 Refuse; Storage and Collection Regulations regulates recycling and compost activities within the City.

☐ Additional listings are on attached pages.

CAPACITY CERTIFICATIONS

Every County with less than ten years of capacity identified in their Plan is required to annually prepare and submit to the DEQ an analysis and certification of solid waste disposal capacity validly available to the County. This certification is required to be prepared and approved by the County Board of Commissioners.

X This County has more than ten years capacity identified in this Plan and an annual certification process is not included in this Plan.

☐ Ten years of disposal capacity has not been identified in this Plan. The County will annually submit capacity certifications to the DEQ by June 30 of each year on the form provided by DEQ. The County's process for determination of annual capacity and submission of the County's capacity certification is as follows:

Pine Tree Acres Landfill has a projected remaining capacity of 59,000,000 in-place cubic yards. This is equivalent to 118,000,000 in-gate cubic yards. This projection includes existing and future capacity.

The original Pine Tree Acres site comprised approximately 160 acres of land. In 1988, an additional 300 acres of property was approved by Macomb County increasing the total acreage to approximately 460 acres. The landfill was evaluated by Macomb County based on geologic and hydrogeologic conditions, availability of cover material, accessibility, capacity, isolation, and zoning/land use issues and was deemed to be in conformance with the Macomb County Solid Waste Management Plan.

Pine Tree Acres, Inc. requested the inclusion of an additional 108 acres of contiguous property located on the eastern side of the landfill in this Plan update. The additional acreage would compensate for land previously approved by Macomb County that was not developable due to MDEQ mandated setbacks and area set aside for wetlands mitigation.

The additional 108 acres of land are deemed to be in conformance with the Macomb County Solid Waste Plan and have been included in the calculations for site capacity. This plan recognizes 568 acres of property in Sections 23 and 24 of Lenox Twp. being available for landfilling activities by the Pine Tree Acres landfill.

A calculation was completed to determine the expected life of the site and assumed that all waste generated in Macomb County would be disposed in the Pine Tree Acres landfill. The Macomb County projection included all waste currently disposed at the Grosse Pointe-Clinton Refuse Disposal Authority Incinerator which is expected to close prior to April 1999. The calculation also assumed that all of the waste imports identified in Table 1-A would continue through the life of the landfill. Based on these waste projections, and the available capacity, the expected life of the Pine Tree Acres landfill

is 27 years. This exceeds the required capacity for Macomb County for the next five and 10 year planning periods.

Pine Tree Acres has notified Macomb County that it's listed capacity is available for all communities in the Macomb County planning area. This documentation letter, including a map of the landfill property, is included in Appendix D, Listed Capacity.